PUBLIC REVIEW DRAFT

AVIANO ADULT COMMUNITY PROJECT ENVIRONMENTAL IMPACT REPORT

TECHNICAL APPENDICES

STATE CLEARINGHOUSE #2006072027

LSA

November 2008

PUBLIC REVIEW DRAFT

AVIANO ADULT COMMUNITY PROJECT ENVIRONMENTAL IMPACT REPORT

TECHNICAL APPENDICES

STATE CLEARINGHOUSE #2006072027

Submitted to:

City of Antioch
P.O. Box 5007
Antioch, CA 94531-5007

Prepared by:

LSA Associates, Inc.
2215 Fifth Street
Berkeley, CA 94710
510.540.7331

LSA

November 2008

AVIANO ADULT COMMUNITY
ENVIRONMENTAL IMPACT REPORT

Technical Appendices

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NOTICE OF PREPARATION (NOP) AND COMMENT LETTERS

NOTICE OF PREPARATION (NOP)

TO: AFFECTED AGENCIES, INTERESTED PARTIES, AND INDIVIDUALS

FROM: CITY OF ANTIOCH

SUBJECT: **Aviano Adult Community Project**
Notice of Preparation of a Draft Environmental Impact Report

LEAD AGENCY:
City of Antioch
Third & "H" Streets
Antioch, CA 94509
(925) 779-7035
Contact: Nina Oshinsky, Senior Planner
Email: noshinsky@ci.antioch.ca.us

CONSULTANT:
LSA Associates, Inc.
2215 Fifth Street
Berkeley, CA 94710
(510) 540-7331
Contact: Brenda Gillarde, Project Manager
Email: Brenda.Gillarde@lsa-assoc.com

PROJECT APPLICANT: Pulte Home Corporation

Notice is hereby given that the City of Antioch will be the Lead Agency and will prepare an Environmental Impact Report (EIR) for the project described below. The City is requesting comments on the scope and content of this EIR. The City will use the EIR prepared for this project when considering approval of the project. A description of the project, its location, and its probable environmental effects are provided below.

Please provide comments on the scope of this EIR to **Nina Oshinsky** by **August 7, 2006** at the address shown above.

INTRODUCTION: The purpose of an EIR is to inform decision-makers and the general public of the environmental effects of a proposed project. The EIR process is intended to provide environmental information sufficient to evaluate a proposed project and its potential to cause significant effects on the environment; examine methods of reducing adverse environmental impacts; and consider alternatives to the proposed project. The Aviano Adult Community Project EIR will be prepared and processed in accordance with the California Environmental Quality Act (CEQA) and the *CEQA Guidelines*. The Aviano Adult Community Project EIR will include the following:

- Summary of the proposed project and its potential environmental effects;
- Description of the proposed project;
- Description of the existing environmental setting, potential environmental impacts of the project, and mitigation measures;
- Cumulative impacts;
- Alternatives to the proposed project; and
- CEQA required assessments and conclusions.

PROJECT LOCATION: The approximately 194-acre project site is located in the largely undeveloped southeastern portion of the City of Antioch, in East Contra Costa County. The project site is generally rectangular; however the southwestern and southern borders curve inward and are irregularly shaped. Figure 1 shows the project site's regional and local context. The project site includes Assessor's Parcel Numbers (APNs) 057-050-013 and 057-030-001.

Existing Land Use. The project site currently consists of undeveloped grazing land and has relatively flat terrain; there are no existing structures on the project site. Sand Creek flows in a northeastern direction across the southern portion of the site. A 25-foot wide Shell Oil Company pipeline easement runs in an east-west direction across the site and the pipeline can be seen above ground where it crosses Sand Creek in the southeast portion of the site. A 200-foot wide PG&E transmission line easement runs from the southeast corner of the site to the northwest to approximately the center of the northern property boundary.

The project site is located within the Sand Creek Focus Area as shown in the City of Antioch General Plan Land Use Map. The General Plan designates the majority of the northern portion of the site as Low Density Residential. Smaller portions of the site, south of Sand Creek Road, are designated Multiple Family Residential and Public/Quasi Public. The southernmost portion of the site is designated Hillside, Estate and Executive Residential/Open Space. The project site is zoned (S) Study District.

Surrounding Land Uses. The project site is bordered to the north by existing single-family residential uses and a neighborhood park; to the west by the planned Antioch Unified School District Magnet High School, the partially constructed Kaiser Hospital medical facilities, and undeveloped land planned for future mixed use and commercial development; to the east by undeveloped land planned for future Business Park uses; and to the south by undeveloped grazing land. A future Sports Complex is planned south of Sand Creek. Figure 2 shows an aerial view of the project site and surrounding land uses.

PROJECT DESCRIPTION: The project applicant proposes to rezone and develop an active adult community on the approximately 194-acre site with up to 570 adult single-family residential units on 73.2 acres, a 4.9-acre recreation facility, 28.9 acres of parks and landscaped areas, a 4.4-acre creek buffer area, 34.8-acres of open space, and associated parking, roadway, and utility improvements. A medically focused Magnet High School has also been planned for development on approximately 9.5 acres of land adjacent to the southwest corner of the site; the project would construct roadway improvements and infrastructure that would serve this facility. Figure 3 depicts the conceptual site plan for the proposed project. The following provides a summary of the primary components of the proposed project.

Residential Development. The proposed project would develop 73.2 acres with single-family residential units with an average density of 7.8 units per gross acre. Six different product models would be constructed, ranging from approximately 1,350 to 2,250 square feet in size on lots ranging from approximately 4,000 to 6,000 square feet. All homes would be single-level with a two-car attached garage.

Circulation, Parking, and Access. Primary vehicular ingress and egress to the proposed project site would be provided by a newly constructed 1,650-foot extension of Hillcrest Avenue along the eastern boundary of the project site. The project also includes construction of approximately 2,850 feet of the proposed Sand Creek Road from the Hillcrest Avenue intersection to the western property line, including along the frontage of the Magnet High School site and Contra Costa County Flood Control and Water Conservation District's detention basin. Sidewalks would be provided on both sides of Sand Creek Road and on the west side of Hillcrest Avenue for pedestrian access. The project would also construct a roadway extension from the proposed Sand Creek Road to provide access to the planned Magnet High School. Entry to the residential component of the project site would be via both of these newly constructed roads. The internal vehicular circulation would be provided by a circular street pattern connecting to internal two-way streets and cul-de-sacs within the residential area. Each residential unit would have a two-car garage, with additional curbside street parking. Separate parking would also be provided for the recreational facility.

Parks, Recreation and Open Space. Approximately 40 percent of the project site would be set aside as open space, parks, walking trails, Sand Creek buffer area, and public recreational facilities. A 16,000 foot recreational facility would be located on about 5 acres of the site and the grounds would include a tennis

stadium with additional courts for conversion to other sporting uses, a fitness pool, fitness center, lounge pool and spa, lifelong learning center, billiards, outdoor entertaining areas, meeting and multi-purpose rooms, and other such recreational amenities.

The proposed project would also provide approximately 12 acres of public parks and about 39 acres of natural open space habitat south of Sand Creek. Within the open space area, 4.4 acres of habitat would be preserved along the Sand Creek corridor, including a 100-foot setback buffer area from each side of the creek top of bank. Approximately 34 acres of the site, south of the Sand Creek buffer area, would be dedicated as permanent open space. A public trail system would also pass through the site and extend along Sand Creek, connecting the existing trail north of the site to the southern boundary of the site at Sand Creek Road. The existing neighborhood park north of the project site would also be expanded onto the project site. The PG&E easement that bisects the site would act as a linear greenway linking this park with the open space area and the planned Sports Complex.

The proposed project may also include the purchase and preservation, in fee or through conservation easements, of off-site habitat to mitigate for the potential loss of special-status species habitat on the project site if necessary.

Utilities and Infrastructure. The proposed project would include the extension of utilities and infrastructure to serve the project site. Water would be distributed to the project site by existing lines beneath Hillcrest Avenue and Candlewood Way, north of the site; these lines would continue within the road extensions and create a loop with the trunk line to be constructed within Sand Creek Road. Existing sanitary sewer lines beneath Heidorn Ranch Road would be upgraded and extended to serve the project site and would be located along the future alignment of Sand Creek Road. This line would also provide a gravity connection for the southern half of existing Lone Tree Valley residential developments, and would allow the City to abandon a sanitary sewer lift station along Hillcrest Avenue. Existing storm drainage pipes run south along the western boundary of the project site and drain to existing detention basins; these existing pipes would serve the planned Magnet High School. The remaining storm drainage would run to two interim detention basins located south of future Sand Creek Road and then drain to Sand Creek. Permanent regional detention basins are planned for development south of the project site and would be utilized by the project once they are operational.

Dry utilities, electrical, gas and technology lines would be extended from those existing in Hillcrest Avenue and would be looped back to Candlewood Way. There is an existing overhead power line extending south from Hillcrest Avenue that would be relocated in an underground conduit with the extension of Hillcrest Avenue.

Project Approvals. Development of the proposed project would require the following approvals: rezoning from Study District to Planned Development Zoning; approval of Residential Development Allocations; a Development Agreement; a Master Development Plan; Use Permit; a Vesting Tentative Map; and Design Review. Various Resource Agency permits would also be required, including a U.S. Army Corps of Engineers Section 404 permit, a Biological Opinion from the U.S. Fish and Wildlife Service, Waste Discharge Requirements and Section 401 water quality certification from the San Francisco Bay Regional Water Quality Control Board, and a Section 1602 streambed alteration agreement from the California Department of Fish and Game.

PROBABLE ENVIRONMENTAL EFFECTS: The following environmental factors have preliminarily been identified as having the potential to have a significant environmental effect: Land Use and Planning Policy; Transportation and Circulation; Air Quality; Noise; Cultural Resources; Geology, Soils and Seismicity; Hydrology and Water Quality; Public Health and Safety; Biological Resources; Public Services; Utilities and Infrastructure; Visual Resources; and Agricultural and Mineral Resources. Each of

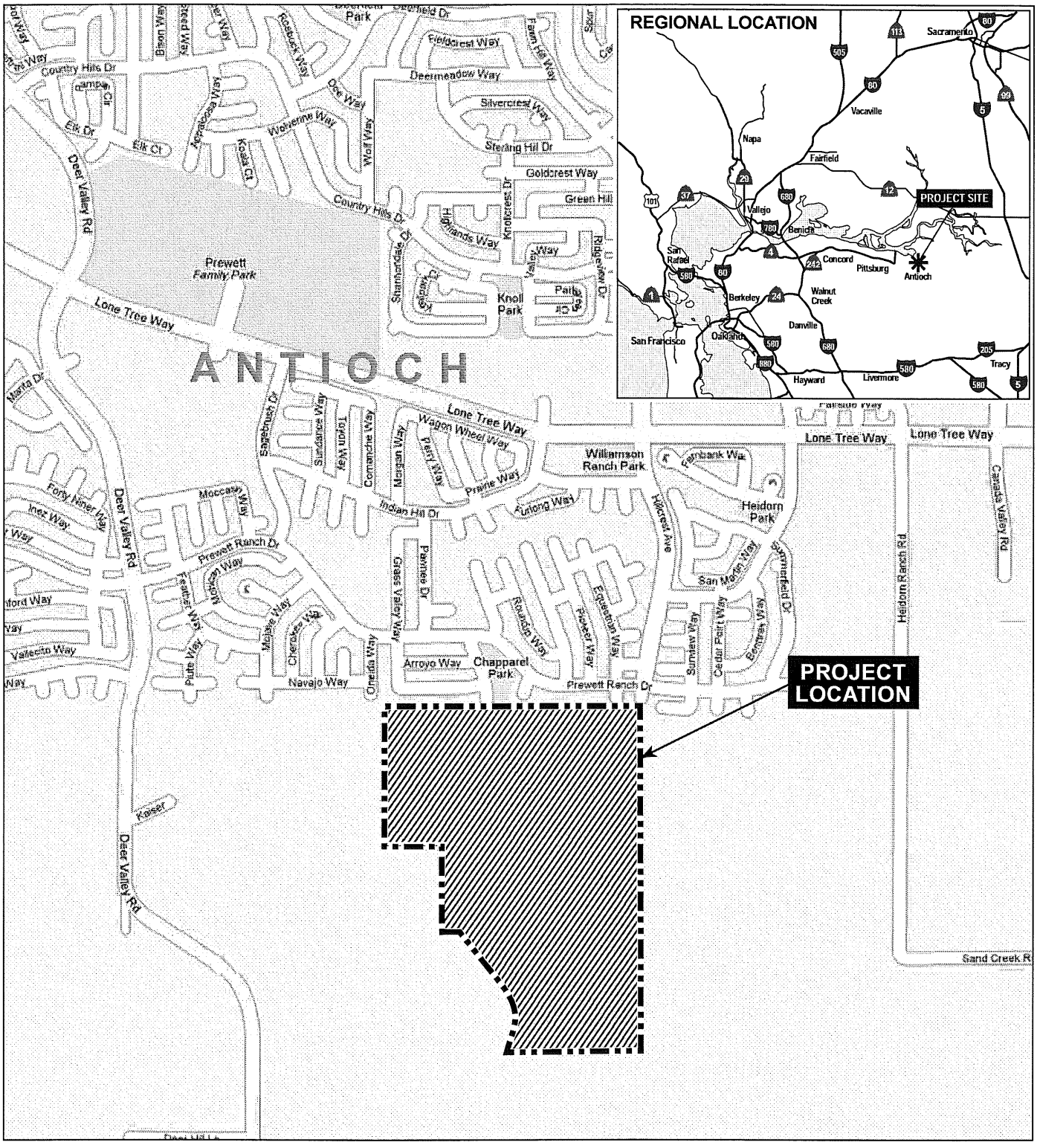
these environmental factors will be analyzed in the EIR. Additional topics may be analyzed based on responses to this Notice of Preparation and/or findings of the analysis.

Environmental factors that are expected to be of greatest concern are described below:

- **Transportation and Circulation**. The proposed project would affect the traffic and circulation and parking patterns in the project vicinity. The EIR would evaluate the proposed circulation system for potential impacts and identify appropriate mitigations measures.
- **Hydrology and Water Quality**. The southern portion of the site is traversed by Sand Creek. Approximately 300 feet on either side of the creek are designated as a 100-year floodplain by FEMA. The surface water quality of the creek may be adversely affected by past land uses in the area, including historic coal mining and agricultural activities. The EIR will evaluate the potential impacts of the past activities as well as the project's effect on hydrology and water quality on the site.
- **Biological Resources**. Several sensitive resources are either known to be present, or may be potentially present on the project site. Sensitive resources confirmed to be present on the site include burrowing owls, as well as aquatic habitats and potentially jurisdictional waters associated with Sand Creek. Other sensitive resources that potentially may occur on the site include the California horned lark, California red-legged frog (CRLF), vernal pool fairy shrimp, and western pond turtle. The EIR will evaluate the potential impacts to these sensitive resources and identify mitigation measures as appropriate.
- **Public Services**. Implementation of the proposed project could have impacts on the provision of public services such as police and fire services, parks and recreation, and libraries. The EIR will evaluate these impacts.
- **Utilities and Infrastructure**. The proposed project would require the extension of storm water, sewer, electric/gas, and water supply infrastructure to and throughout the project site and may also require off-site improvements. In addition, implementation of the proposed project would result in increased water consumption. Pursuant to Section 15083.5 of the 2006 *California Environmental Quality Act Guidelines*, a Water Supply Assessment would be prepared to determine if existing water supplies could accommodate development proposed as part of the project.
- **Visual Resources**. The site's existing undeveloped appearance would be altered by onsite grading, and by the introduction of new buildings, parking and site improvements associated with buildout of the project. The EIR will evaluate the potential impacts to the visual character of the site.

DATE: July 7, 2006 **SIGNATURE:**_____

Nina Oshinsky, Senior Planner



LSA

FIGURE 1

LEGEND

PROJECT AREA

0 660 1320

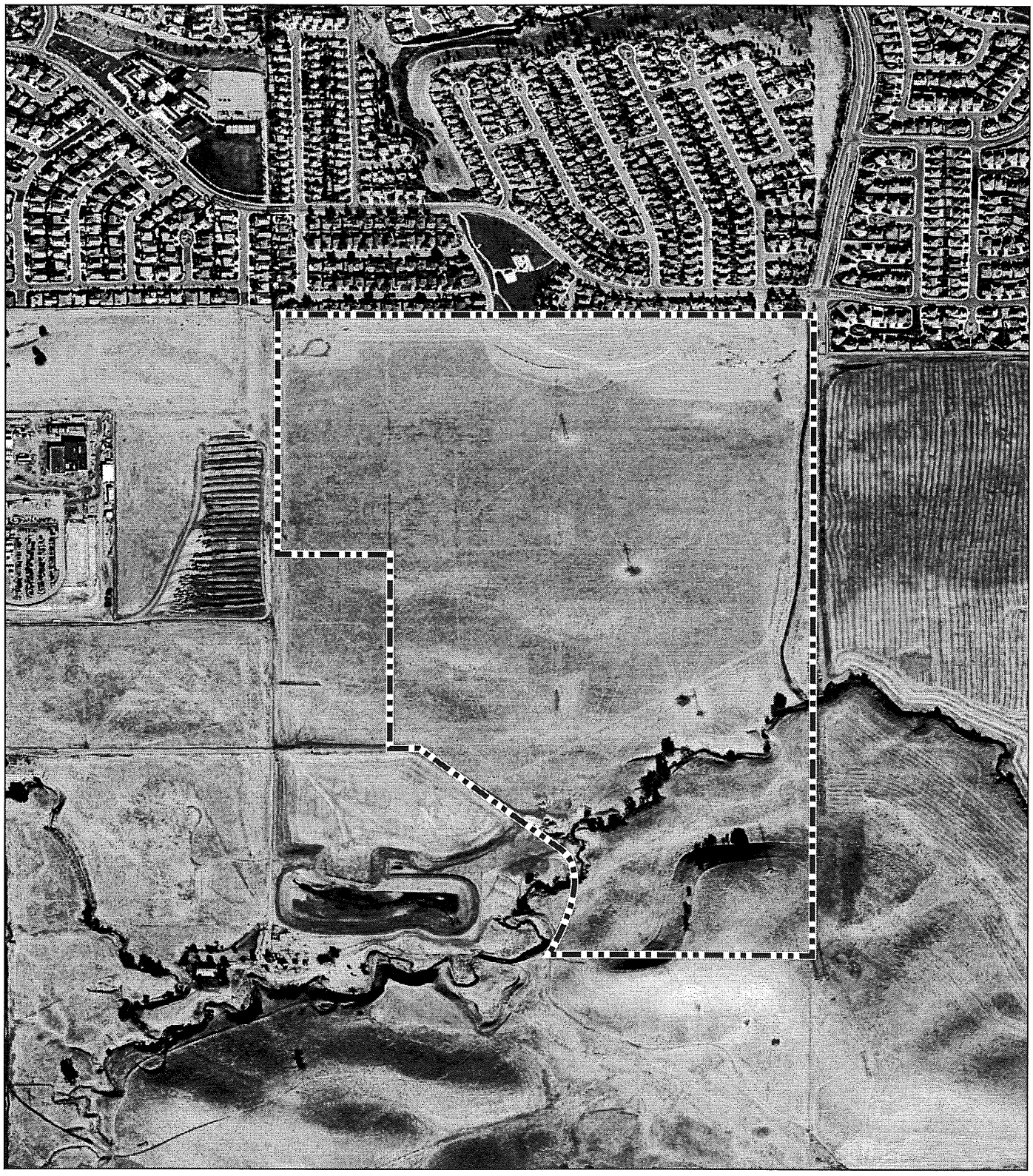
FEET

Aviano Adult Community Project

Project Vicinity and Regional Location Map

SOURCE: GOOGLE MAPS; LSA ASSOCIATES, INC., 2006

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LSA

FIGURE 2

N

0 330 660
FEET

PROJECT SITE

Aviano Adult Community Project
Aerial Photograph

SOURCE: GLOBEXPLORER, NOVEMBER, 2005.

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LSA

PROJECT SITE

118	40' x 100' LOTS (21%) (DENOTED ON THE PLAN BY AN ASTERISK "*")
284	50' x 100' LOTS (51%)
160	60' x 100' LOTS (28%)
562	TOTAL UNITS

N

0 400 800

FEET

SOURCE: PULTE HOMES, 2006

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FIGURE 3

Aviano Adult Community Project
Preliminary Conceptual
Land Use Plan

TRI DELTA TRANSIT
EASTERN CONTRA COSTA TRANSIT AUTHORITY
801 Wilbur Avenue
Antioch, California 94509
925.754.6622
925.757.2530 FAX

RECEI
AUG 2
CITY OF ANTIOCH
MMUNITY DEVELOP

August 21, 2006

City of Antioch
Land Planning Department
Attn: N. Oshinsky
Third & "H" Streets
P.O. Box 5007
Antioch, CA 94531-5007

Re: Aviano Adult Community Project.

Dear Ms. Oshinsky:

Tri Delta Transit has reviewed the plans for the development referenced above. This development is not currently served by any Tri Delta Transit bus routes; the nearest bus service is our route 388, which serves the Kaiser Medical Center due west of this development. For several reasons, including the Magnet High School and the high density senior housing in this area, we consider this development to be both a major trip generator and destination point which will need bus stops along both Hillcrest Avenue and Sand Creek Road to be served adequately. Due to the four-lane divided, arterial nature of both these roads, these bus stops will require bus turnouts.

In order to provide service for students of the Magnet High School, we request the inclusion of complimentary bus turnouts along Sand Creek at its intersection with the street running along the west side of the Magnet High School. The inclusion of a bus turnout located along southbound Hillcrest Avenue at its intersection with the eastern entrance road to this project would serve the residents of the senior community living on the eastern edge of this development. Unfortunately, due to the cul-de-sac design plans for this neighborhood which provides no entrance to the community on the eastern border, the bus stops named above may not be within easy reach of some of the senior residents of this community situated in the southern and western portions of the community. The inclusion of turnouts along Sand Creek Road at its intersection with the southern entrance to this development place all the seniors of this development within walking distance of public transit.

Recycled Paper

In all the cases named above, the preferable location for the placement of bus stops is on the far side of the intersecting street; placement of buses on the far side of a cross street means that, with signalized intersections, a bus is able to pull out of a turnout during a red light and faces minimized oncoming traffic while doing so.

Thank you for the opportunity to comment.

Sincerely,

Justin Tracy
Intern

JT:jt

Contra Costa County
FLOOD CONTROL
& Water Conservation District

Maurice M. Shiu
ex officio Chief Engineer
255 Glacier Drive, Martinez, CA 94553-4825
Telephone: (925) 313-2000
FAX (925) 313-2333

August 9, 2006

Nina Oshinsky
City of Antioch
Third & "H" Streets
Antioch, CA 94509

Our Files: 97-104
3104-06 APNs 057-050-013, 057-030-001

Dear Ms. Oshinsky:

We have reviewed the Notice of Preparation (NOP) for the Aviano Adult Community Project, which is located east of Deer Valley Road adjacent to the future Sand Creek Road extension. We realize that some of our comments may be more suited to the tentative map phase of the proposed development. However, since our NOP and tentative map comments overlap, we decided to give the City and the developer as many of our comments as possible at this time. Our office received the NOP on July 10, 2006, and we submit the following comments:

Upper Sand Creek Detention Basin

1. The project is located in Drainage Area 104 (DA 104) which represents the Sand Creek watershed. Sand Creek is part of the Marsh Creek, Flood Control Zone 1, Regional Master Plan. This plan is designed to prevent flooding by anticipating development in the Marsh Creek watershed (including tributary watersheds) through improving channel capacities and constructing various detention basins. The plan includes the Upper and Lower Sand Creek Detention Basins. The proposed project is immediately east (adjacent and downstream) of the Upper Detention Basin, and is upstream of the Lower Detention Basin. These basins are critical components of the plan to bring flood control to the Sand Creek and Marsh Creek watersheds. Both of these basins are currently in an interim state and the District is working to complete them as soon as possible.

2. Sand Creek currently does not have adequate capacity to convey the 100 year design storm at locations downstream of the project. Residents adjacent to the creek, downstream of the project (but upstream of the Lower Detention Basin), experienced flooding during the 2005/06 rainy season. Increases in impervious surface, as proposed by the project, would exacerbate the existing flooding potential. As the stated purpose of the Upper Sand Creek Detention Basin is to reduce peak flows in Sand Creek and Marsh Creek, and as it is the only flood control facility to provide this benefit to the portion of Sand Creek upstream of the Lower Detention Basin (subject to flooding), the applicant should be conditioned, in the tentative map phase, to mitigate the increase in peak runoff due to the development by participating in the construction of the Upper Detention Basin.

3. While the majority of the basin excavation will be completed in the next two years, the following work items are anticipated to remain in order to complete the basin construction. The project

should be conditioned to construct these items with the first phase of development to ensure that the increased runoff due to the project is not present prior to construction of the accompanying drainage improvements. A Flood Control Enroachment Permit will be required for all work on District property.

- Construct the primary outfall structure for the basin, which is proposed as a 42" pipe that extends approximately 1,700 feet through the Pulte property, to daylight and discharge to Sand Creek.
- Construct the emergency outfall structures.
- Construct the basin inlet structure.
- Complete the final grading of the basin along the contiguous property lines.

4. The project should also be conditioned, in the tentative map phase, to dedicate an easement to the District for the primary outfall pipe which will run across the development to Sand Creek.

5. Approved regional improvements made by the developer in conjunction with the DA 104/Zone 1 master plan will be eligible for credit against the DA 104 drainage area fees required of the developer. Approved regional improvements made in excess of the amount due in fees will be eligible for a reimbursement agreement between the developer and the Flood Control District.

6. These future conditions of approval and subsequent off-site improvements should be fully addressed in the Draft Environmental Impact Report (DEIR) for this project. The District is aware of listed species located within the general project area. In addition to evaluating the impacts of the off-site improvements, the DEIR should also mention the easement for the primary outfall pipe, as well as the fact that a Flood Control Encroachment Permit will be required to complete the work. The District is required to have CEQA clearance for both real property transactions and issuance of encroachment permits. The developer will be forced to prepare a separate CEQA document if these items are not addressed in the forthcoming DEIR.

7. The District has included both of the Sand Creek detention basin projects in establishing the Habitat Conservation Program (HCP) with the regulatory agencies. The California Department of Fish and Game (CDFG) has accepted the proposed Upper Detention Basin into the HCP which will help streamline the environmental permitting process. It is our understanding that, as the City of Antioch is currently not part of the HCP, the developer will work directly with the District to meet the requirements of the HCP once the CEQA document, prepared by the City, is in place.

8. The District is concerned about the geotechnical impact of the proposed water quality pond identified to the east of the detention basin. The pond is proposed with a levee between it and the detention basin. The saturated conditions associated with a water quality pond could compromise stability of the detention basin dam. The developer should be required to conduct a stability study prepared by a registered geotechnical engineer. The Upper Sand Creek Detention Basin may be under the jurisdiction of the Division of Safety of Dams. The developer should consult with the DSOD to determine if the proposed downstream uses are compatible. The Upper Detention Basin is proposed to have a volume of just under 1,000 acre-feet, with a depth of 35 feet, making it one of the largest facilities in the County.

9. To avoid the basin overtopping in a 100 year storm, the emergency spillway must be located at elevation 192.5 feet, according to the hydraulic analysis and approved design of the basin. The resulting perimeter elevation required (top of bank) is 195 feet. The developer should be aware of this requirement when preparing the project's preliminary grading plan. If additional "fill" material is required, the applicant could use the detention basin as a borrow site.

General Comments

10. We recommend that the City examine the impacts of the additional impervious surface areas created by this project and condition the developer to design and construct storm drain facilities to adequately collect and convey stormwater entering or originating within the development to the nearest adequate man-made drainage facility or natural watercourse, without diversion of the watershed. This requirement could be addressed, in part, by the construction of the Upper Sand Creek Detention Basin.

11. As a mitigation measure for the increased impervious surface area created by the project, the developer should be required to submit hydrology and hydraulic calculations to the City that prove the adequacy of the in-tract drainage system and the downstream drainage system. We defer review of the local drainage system to the City. The District is available to review these calculations, as well as other technical aspects of the project, under our fee-for-service program.

12. We recommend that the City condition the developer to contact the appropriate environmental regulatory agencies such as the U.S. Army Corps of Engineers, State Department of Fish and Game, and State Regional Water Quality Control Board to obtain all the necessary permits for this project, or show that such permits are not necessary.

13. The DA 104 hydrology calculations for the project area are based on a land-use of single family residential for the northern portion of the project and open space for the southern portion. These appear to be compatible with the land-uses proposed in the NOP.

14. Any permanent structures in the vicinity of Sand Creek should be subject to the City of Antioch's creek structure setback ordinance.

15. The Hydrology Section of the DEIR should quantify the amount of runoff that would be generated by the project and discuss how the runoff entering and originating from the site would be distributed between the natural watercourses, the water quality ponds, and the man-made drainage facilities.

16. The DEIR should address the potential water quality impacts of the proposed project and the applicant should be required to comply with the current NPDES (National Pollutant Discharge Elimination System) requirements under the City Stormwater Management and Discharge Control Ordinances and the C.3 Guidebook. We support the state's goal of providing best management practices to achieve the permanent reduction or elimination of storm water pollutants and downstream erosion from new development. The District is available to provide technical assistance for meeting these requirements under our fee-for-service program.

Drainage Area Fees

17. This project is located within Drainage Area 104 (DA 104), for which a drainage fee is due in accordance with Flood Control Ordinance Number 90-74. By ordinance, all building permits or subdivision maps filed in this area are subject to the provisions of the drainage fee ordinance. Effective October 27, 1990, the current fee in this drainage area is $0.17 per square foot of newly created impervious surface. The drainage area fee for this development should be collected prior to filing the final map. As previously noted, the costs of the construction of approved DA 104 facilities (such as Upper Sand Creek Detention Basin) would be eligible as credits against the DA 104 fees.

18. The District is not the approving local agency for this project as defined by the Subdivision Map Act. As a special district, the District has an independent authority to collect drainage fees that is not restricted by the Subdivision Map Act. The District regularly adjusts its drainage fees to reflect increasing construction costs. The drainage fee rate does not vest at the time of tentative map approval. The drainage fees due and payable will be based on the fee in effect at the time of fee collection.

19. The District periodically reviews drainage area fees to ensure they are adequate to complete the drainage infrastructure shown on the adopted drainage area plan. As part of this effort, the drainage fee ordinance for DA 104 is expected to be amended by the Board of Supervisors in the fall of 2006. This will represent a significant increase from the fee currently in effect.

We appreciate the opportunity to review planning documents that involve drainage matters and welcome continued coordination. We look forward to reviewing the DEIR for this project. If you have any questions, please call me at (925) 313-2304 or Tim Jensen at (925) 313-2396.

Sincerely,

Wes Cooley
Civil Engineer
Flood Control Engineering

WC:kg
G:\FldCtl\CurDev\CITIES\Antioch\Aviano Adult Community\NOP.doc

c: Greg Connaughton, Assistant Chief Engineer, Flood Control
Bob Faraone, Flood Control
Tim Jensen, Flood Control
Paul Detjens, Flood Control
Mary Halle, Flood Control
Karen Fernandez, Accounting
Cece Sellgren, Environmental
Brenda Gillarde, LSA Associates, Inc.
2215 Fifth Street
Berkeley, CA 94710
Dennis O'Keefe, Pulte Homes
6210 Stoneridge Mall Road
Pleasanton, CA 94588
Brian Bornstein, City of Brentwood
708 Third Street
Brentwood, CA 94513
Bill Silva, City of Brentwood

Contra Costa County Fire Protection District

Fire Chief
KEITH RICHTER

August 7, 2006

RECEIVED

AUG 15 2006

CITY OF ANTIOCH
Building Division

Ms. Nina Oshinsky
City of Antioch
Community Development Department
Third & "H" Streets
Antioch, CA 94509

Subject: ***Aviano Adult Community Project***
194-acre site southwest of current termination of Hillcrest Avenue in Antioch
CCCFPD No. 107732

Dear Ms. Oshinsky:

We have reviewed your letter dated June 10, 2006 in which you request information be used in the preparation for the Environmental Impact Report (EIR) for the subject project. In summary, the project would allow development of an active adult community on approximately 194-acres.

This project is regulated in part by codes and ordinances administered by this Fire District relative to Contra Costa County Ordinance 2002-32, 2001 California Fire Code and nationally recognized standards. We require that the condition of approval documents include a copy of this letter and/or the following information:

1. Fire protection, suppression, emergency medical and rescue services for this project site are provided by Contra Costa County Fire Protection District (CCCFPD) and East Contra Costa Fire Protection District (ECCFPD).

2. An initial full alarm response to the proposed development from CCCFPD and ECCFPD consists of Engines 88, 82, 52, and 81, Quint 83 and Battalion Chief 8.

   a. CCCFPD Fire Station 88 is located at 4288 Folsom Drive in Antioch, approximately 3.3 miles away from proposed site, with an approximate response time of 6 ½ – 7 ½ minutes*. Station 88 is staffed with three (3) personnel 24 hours per day and equipped with one (1) Type 1 Engine Company (Engine 88), one (1) Type 4 Wild Land Unit and one (1) Breathing Support Unit.

   b. CCCFPD Fire Station 82 is located at 196 Bluerock Drive in Antioch, approximately 4.3 miles away from proposed site, with an approximate response time of 8 ½ – 9 ½ minutes*. Station 82 is staffed with three (3) personnel 24 hours per day and equipped with one (1) Type 1 Engine Company (Engine 82), one (1) Type 3 Wild Land Unit and one (1) Mass Casualty Trailer Unit.

   c. ECCFPD Fire Station 52 is located at 201 John Muir Parkway in Brentwood, approximately 5.3 miles away from proposed site, with an approximate response

time of 10 ½ - 11 ½ minutes*. Station 52 is staffed with three (3) personnel 24 hours per day and equipped with one (1) Type 1 Engine Company (Engine 52).

d. CCCFPD Fire Station 81 is located at 315 West 10th Street in Antioch, approximately 6.8 miles away from proposed site, with an approximate response time of 13 ½ - 14 ½ minutes*. Station 81 is staffed with three (3) personnel 24 hours per day and equipped with one (1) Type 1 Engine Company (Engine 81) and one (1) Type 3W Wild Land Unit.

e. CCCFPD Fire Station 83 is located at 2717 Gentrytown Drive in Antioch, approximately eight (8) miles away from proposed site, with an approximate response time of 16 - 17 minutes*. Station 83 is staffed with three (3) personnel 24 hours per day and equipped with one (1) Type 1 (75-foot) Truck Company (Quint 83) and one (1) Type 3 Wild Land Unit.

f. CCCFPD Battalion Chief may be responding from any where within Battalion 8's jurisdiction.

***Note:** Response time is an estimated calculation from the respective neighboring stations to the proposed entrance for the subject project.

3. The Contra Costa County Fire Protection District cannot serve the proposed project without mitigation. Based upon nationally recognized standards, the Fire District "shall have the capability to deploy an initial full alarm assignment within an eight (8) minute response time to 90 percent of the incidents" (NFPA 1710 section 5.2.3.2.1). At the present time, four (4) of the five (5) pieces of apparatus assigned to the first (full) alarm exceed the 8-minute response time by approximately one (1) to ten (10) minutes. This is also to assume that these Engine and Truck Companies are in quarters (their Fire Stations) and are not on the other emergency responses.

4. The Fire District's rescue and advanced life support services are delivered through a combined response from Contra Costa County Fire Protection District and American Medical Response (AMR) ambulance service. District paramedic personnel are located at all fire stations. (See response time from the respective fire station location).

5. The addition of the subject development and expected population increase will impact the Fire District's ability to deliver emergency services to proposed homes, existing surrounding service areas and may adversely effect the Fire Districts ISO rating.

6. In order to maintain CCCFPD required service levels the following conditions shall be required to be met for Fire District approval of the proposed development:

   a. The developer shall wholly or in part provide a 1-acre building site at a location subject to approval by CCCFPD, a new Fire Station constructed to CCCFPD specifications, one (1) Type 1 Fire Engine with respective equipment as specified by CCCFPD and one (1) Type 3 Wild Land Unit with respective equipment as specified by CCCFPD. This Fire Station and apparatus shall be provided and in service prior to any vertical or combustible construction on site.

b. There shall be a Benefit Assessment District assigned to all properties within this development to provide all or in part the minimum required staffing of the required Fire Station and apparatus required for this development for a minimum duration of ten (10) years, with automatic five (5)-year extensions or until otherwise determined by local jurisdictions.

c. The extension of Hillcrest Avenue to the proposed intersection of Sand Creek Road and the proposed Sand Creek Road between Deer Valley Road and newly extended Hillcrest Avenue shall be completed prior to vertical or combustible construction on site.

d. The Developer shall comply with Article 9, Appendixes III-A, III-B, III-C and III-E of the 2001 California Fire Code.

e. The Developer shall comply with Contra Costa County Fire Protection District's Access and Water Supply Requirements.

This document is understood that the aforementioned responses are to be used to assist in the preparation of the Environmental Impact Report for the proposed Aviano Adult Community Project. The Fire District reserves the right to provide more specific requirements as the project becomes more specifically defined.

The Fire District requires that a copy of the completed condition of approval be forwarded to this office when compiled for the planning agency.

If you have any questions regarding these comments, please contact this office at (925) 941-3300.

Sincerely,

Ian Hardage
Fire Prevention Technician

IH/cmj

File: 107732 – Aviano Adult Community Project

Chevron

RECEIVED
AUG 0 8 2006
CITY OF ANTIOCH
COMMUNITY DEVELOP

Global Gas

Chevron Pipe Line Company
Los Medanos
2360 Buchanan Rd.
Pittsburg, CA 94565
Tel 925 753 2000
Fax 925 753 2030

August 3, 2006

NOTICE OF PREPARATION OF DEIR
AVIANO ADULT COMMUNITY PROJECT
APPLICANT: PULTE HOME COPR.

Ms. Nina Oshinsky
Senior Planner
City of Antioch
P. O. Box 5007
Antioch, CA 94531

Dear Ms Oshinsky:

Chevron has received your July 7, 2006 **Notice of Preparation of a DEIR** together with the vicinity maps for the proposed **Aviano Adult Community Project** in the southeastern portion of Antioch. Please be advised that Chevron Pipe Line Company has no buried pipelines, easements or other facilities in the area that encompasses the limits of the proposed project that could impact the project. Chevron's closest active petroleum pipeline is located within the property of the Kaiser Medical Facility complex to the west of the Aviano Adult Community properties. I've enclosed a copy of an Assessor's Map that indicates the approximate location of Chevron's pipeline and easement indicated in RED within the Kaiser property. Chevron's pipeline is located within Parcel "C" of book 180 PM 17, also identified as Assessor Parcel 057-022-009.

We here at Chevron Pipe Line always appreciate being notified of these projects even if it is determined that we are not involved.

Regards,

LARRY WHITEHEAD
Right of Way Specialist

WLW/wlw

File: NOP of DEIR – Aviano Adult Community - Antioch.doc

N½SEC. 8 T.1N. R.2.E. M.D.B.M.

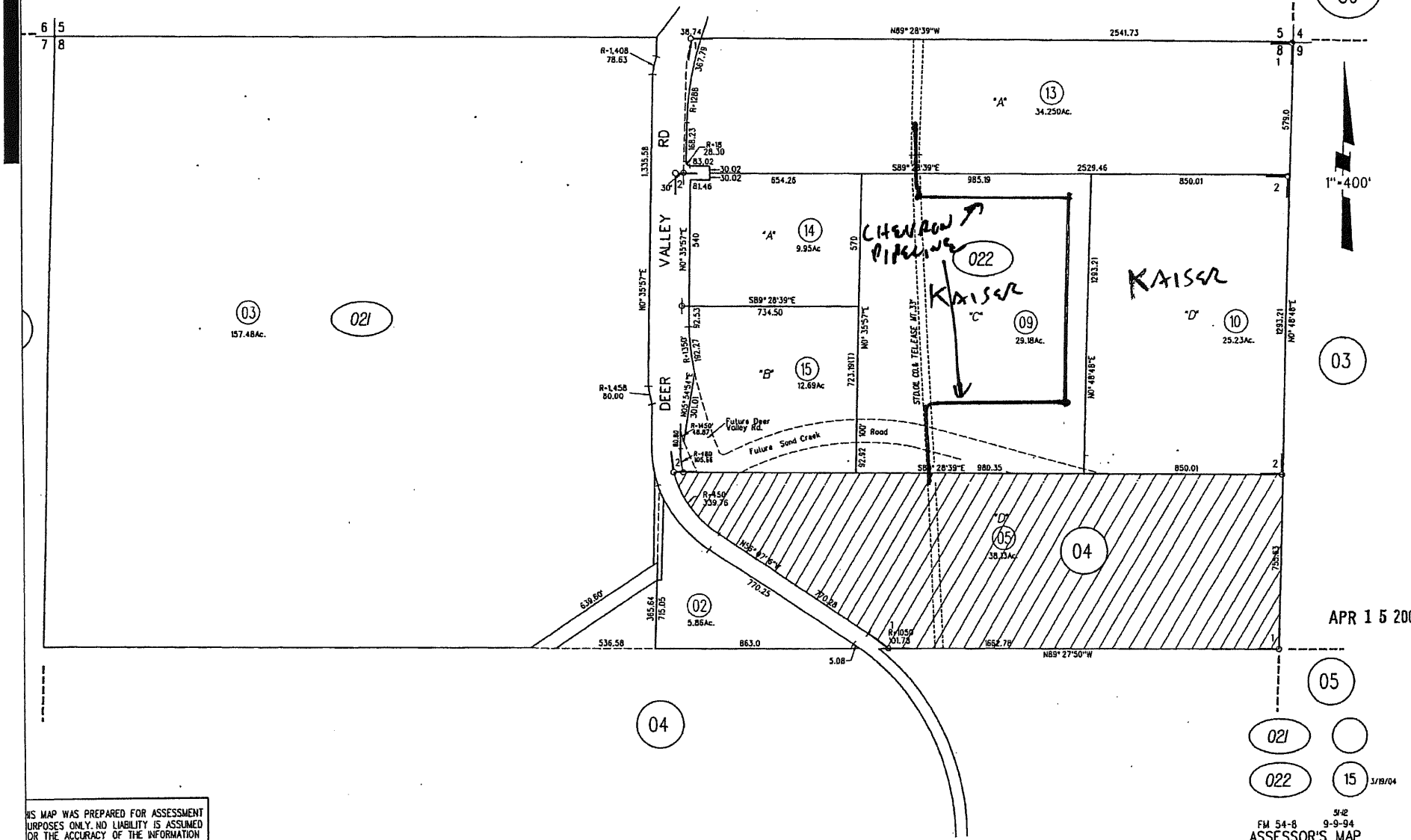
1- 139PM30 5-2-89

2- 180PM17 1-30-01

K-23

PB 55

PB 56



APR 15 2004

THIS MAP WAS PREPARED FOR ASSESSMENT PURPOSES ONLY. NO LIABILITY IS ASSUMED FOR THE ACCURACY OF THE INFORMATION DELINEATED HEREON. ASSESSOR'S PARCELS MAY NOT COMPLY WITH LOCAL LOT SPLIT OR BUILDING SITE ORDINANCES.

FM 54-8 9-9-94

ASSESSOR'S MAP

BOOK 57 PAGE 2

CONTRA COSTA COUNTY, CALIF.

EAST BAY REGIONAL PARK DISTRICT

BOARD OF DIRECTORS
Carol Severin
President
Ward 3
John Sutter
Vice-President
Ward 2
Ayn Wieskamp
Treasurer
Ward 5
Ted Radke
Secretary
Ward 7
Beverly Lane
Ward 6
Doug Siden
Ward 4
Nancy Skinner
Ward 1
Pat O'Brien
General Manager

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AUG 0 8 2006
CITY OF ANTIOCH
COMMUNITY DEVELOPMENT

August 2, 2006

Ms. Nina Oshinsky
Community Development Department
City of Antioch
P.O. Box 5007
Antioch, CA 94531

Subject: Proposed Aviano Adult Community Project – Notice of Preparation
Black Diamond Mines Regional Preserve

Dear Ms. Oshinsky:

Thank you for providing the East Bay Regional Park District ("District") with the Notice of Preparation for the proposed Aviano Adult Community Project in southeast Antioch. The following are the District's scoping comments for consideration in preparing the EIR.

It appears this proposed project is located in the Sand Creek Valley. This valley provides significant habitat for a number of special-status species, including San Joaquin kit fox, California tiger salamander, California red legged frog and vernal pool fairy shrimp. Impacts to these species should be avoided and minimized on-site. Unavoidable impacts should be fully mitigated. This would include remaining open space areas that have been fragmented or isolated by the proposed development.

The District is one of the agencies sponsoring the East Contra Costa Habitat Conservation Plan (HCP). The City of Antioch has opted not to participate in this plan; however, the mitigation ratios, preserve design and funding strategies described in the HCP are directly relevant to the proposed project. A minimum of 3:1 replacement of San Joaquin kit fox habitat should be acquired elsewhere within the HCP preserve design area. To the extent that this mitigation property provides habitat for the other impacted species, it may also serve as mitigation for impacts to these species. If not, then additional habitat may need to be acquired at other locations to meet the full mitigation requirements of this project. There also needs to be adequate funding to provide for the perpetual management of the mitigation properties.

We encourage the City of Antioch to consult with the Department of Fish and Game, and the Fish and Wildlife Service for their requirements on mitigation for impacts to special-status species and their habitats. Please provide us with a copy of the draft EIR (CD preferred) and any public notices regarding this project. Please contact me at (510) 544-2600 if you have questions.

Sincerely,

Brad Olson
Environmental Programs Manager

2950 Peralta Oaks Court P.O. Box 5381 Oakland, CA 94605-0381
TEL 510 635-0135 FAX 510 569-4319 TDD 510 633-0460 www.ebparks.org

TRANSPLAN Committee
East Contra Costa Transportation Planning
Antioch • Brentwood • Oakley • Pittsburg • Contra Costa County

RECEIVED
AUG 0 2 2006
CITY OF ANTIOCH
COMMUNITY DEVELOPMENT

August 1, 2006

Nina Oshinsky, Senior Planner
City of Antioch
P.O. Box 5007
Antioch, CA 94531

Dear Ms. Oshinsky:

Thank you for sending the Notice of Preparation regarding the Aviano Adult Community Project.

The Draft Environmental Impact Report on this project should include analysis of the project's impacts on a specific set of transportation performance standards – known as "traffic service objectives" -- as required by the TRANSPLAN Committee and the Contra Costa Transportation Authority's Measure C Countywide Transportation Improvement and Growth Management Program.

I am attaching the traffic service objectives, which were published in the *East County Action Plan for Routes of Regional Significance* adopted by TRANSPLAN in 2000. Ed Franzen of City staff is familiar with these traffic service objectives.

The regional routes closest to the project area are Lone Tree Way, Deer Valley Road and Hillcrest Avenue, so these roads at a minimum should be subject to the analysis requested above. Additional roadways further from the site also may be analyzed if there is a potential for them to be impacted by the project.

Please contact me if you have questions about this letter.

Sincerely,

John Greitzer
TRANSPLAN staff

Attachment

C: TRANSPLAN Committee
Technical Advisory Committee

651 Pine Street, N. Wing—4th Floor, Martinez CA 94553
Phone: (925) 335-1201 Fax: (925) 335-1300 jgrei@cd.cccounty.us www.transplan.us

- **Transit Ridership** – a measure of the degree to which ridership on public transit has increased from a base year to a horizon year, including bus and rail ridership combined.

  Example: Public transit ridership (counting all public transit systems combined) was 300,000 in the year 2000. Ridership totals 450,000 in the year 2010. Ridership increase = (450,000 – 300,000) / 300,000 = 0.5 or 50%.

The following paragraphs show how the traffic service objectives are applied to specific Routes of Regional Significance in East County.

Peak-hour Vehicle Occupancy

- 1.2 persons per vehicle on SR 4 Freeway during morning peak period (changed from 1.25 in previous East County Action Plan)
- 1.2 persons per vehicle in Vasco Road Corridor during morning peak period (changed from 1.3 persons in previous East County Action Plan)

Level of Service

- D or better at signalized intersections along non-freeway SR 4
- E or better at unsignalized intersections along non-freeway SR 4
- E or better on non-freeway SR 4 from Balfour Road to the San Joaquin County line
- Mid-E or better (traffic no greater than 95% of design capacity) on Kirker Pass Road, Byron Highway, and Marsh Creek Road/Camino Diablo Road/Deer Creek Road (rural portion)
- Mid-D or better (traffic no greater than 85% of design capacity) on intersections along Suburban Arterial Routes except for intersections along Bailey Road.
- E or better at intersections along Bailey Road.

Delay Index

- Less than 2.5 on SR 4 freeway and non-freeway from SR 160 to Balfour Road (changed from 3.0 in previous East County Action Plan)
- Less than 2.5 on the Vasco Road Corridor (changed from 3.0 in previous East County Action Plan)
- Less than 2.0 on SR 4 from Balfour Road to the San Joaquin County line
- Less than 2.0 on Kirker Pass Road, Marsh Creek Road/Camino Diablo Road/Deer -- Creek Road (rural portion)
- Less than 2.0 on Suburban Arterial Routes ← includes Hillcrest, Lone Tree Way, + Deer Valley Road.

Transit Ridership

- Achieve a 25 percent increase in total East County public transit transit ridership by the year 2010 compared to the year 2000, reflecting all forms of public transit collectively, including bus ridership and BART ridership.

Linda S. Adams
Secretary for
Environmental Protection

Department of Toxic Substances Control

Maureen F. Gorsen, Director
700 Heinz Avenue
Berkeley, California 94710-2721

Arnold Schwarzenegger
Governor

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AUG 02 2006
CITY OF ANTIOCH
COMMUNITY DEVELOPM

August 1, 2006

Ms. Nina Oshinsky
City of Antioch
P.O. Box 5007
Antioch, CA 94531

Aviano Adult Community Project – Notice of Preparation

Dear Ms. Oshinsky:

Thank you for the opportunity to comment on the *Aviano Adult Community Project, Notice of Preparation* (SCH # 2006072024). As you may be aware, the California Department of Toxic Substances Control (DTSC) oversees the cleanup of sites where hazardous substances have been released pursuant to the California Health and Safety Code, Division 20, Chapter 6.8. As a potential Responsible Agency, DTSC is submitting comments to ensure that the environmental documentation prepared for this project to address the California Environmental Quality Act (CEQA) adequately addresses any required remediation activities which may be required to address any hazardous substances release.

Description of current property uses indicates a Shell Oil Company pipeline easement running across the southeastern portion of the Site. The project description does not provide adequate information regarding use and historical activities associated with the pipeline easement. A historical assessment of past uses should be done to determine whether hazardous substances may have been released at the Site. Based on that information, sampling may be necessary to determine whether there is an issue which will need to be addressed in the CEQA compliance document. If hazardous substances have been released, they will need to be addressed as part of this project.

For example, if the remediation activities include the need for soil excavation, the CEQA document should include: (1) an assessment of air impacts and health impacts associated with the excavation activities; (2) identification of any applicable local

standards which may be exceeded by the excavation activities, including dust levels and noise; (3) transportation impacts from the removal or remedial activities; and (4) risk of upset should be there an accident at the Site.

DTSC and the Regional Water Quality Control Boards (Regional Boards) signed a Memorandum of Agreement, March 1, 2005 (MOA) aimed to avoid duplication of efforts among the agencies in the regulatory oversight of investigation and cleanup activities at brownfield sites. Under the MOA, anyone requesting oversight from DTSC or a Regional Board must submit an application to initiate the process to assign the appropriate oversight agency. The completed application and site information may be submitted to either DTSC or Regional Board office in your geographical area. The application is available at http://www.calepa.ca.gov/brownfields/MOA/application.pdf.

If you have any questions, please call Ed Gillera of my staff at (510) 540-3826 or email him at egillera@dtsc.ca.gov.

Sincerely,

Denise Tsuji, Unit Chief
Northern California - Coastal Cleanup
Operations Branch

Enclosure

cc: (without enclosure)

Governor's Office of Planning and Research
State Clearinghouse
P.O. Box 3044
Sacramento, California 95814-3044

Guenther Moskat
CEQA Tracking Center
Department of Toxic Substances Control
P.O. Box 806
Sacramento, California 95812-0806

EAST BAY
MUNICIPAL UTILITY DISTRICT

July 26, 2006

RECEIVED
JUL 27 2006
CITY OF ANTIOCH
COMMUNITY DEVELOPM

Nina Oshinsky, Senior Planner
City of Antioch
Third and "H" Streets,
Antioch, CA 94509

Re: Notice of Preparation of a Draft Environmental Impact Report - Aviano Adult Community Project, Antioch

Dear Ms. Oshinksy:

East Bay Municipal Utility District (EBMUD) appreciates the opportunity to comment on the Notice of Preparation of a Draft Environmental Impact Report for the Aviano Adult Community Project in Concord. The project is located outside of EBMUD's Ultimate Service Boundary; EBMUD has no comments regarding environmental issues for this project.

If you have any questions concerning this response, please contact David J. Rehnstrom, Senior Civil Engineer, Water Service Planning at (510) 287-1365.

Sincerely,

William R. Kirkpatrick
Manager of Water Distribution Planning

WRK:TNS:sb
sb06_216.doc

Recycled Paper

STATE OF CALIFORNIA
PUBLIC UTILITIES COMMISSION
505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3298

ARNOLD SCHWARZENEGGER, *Governor*

RECEIVED
JUL 25 2006
CITY OF ANTIOCH
COMMUNITY DEVELOPMT

July 19, 2006

LSA
AUG 15 2006
RECEIVED
Berkeley

Nina Oshinsky
City of Antioch
P. O. Box 5007
Antioch, CA 94531

Dear Ms. Oshinsky:

Re: SCH #2006072024; Aviano Adult Community Project

As the state agency responsible for rail safety within California, we recommend that any development projects planned adjacent to or near the rail corridor in the County be planned with the safety of the rail corridor in mind. New developments may increase traffic volumes not only on streets and at intersections, but also at at-grade highway-rail crossings. This includes considering pedestrian circulation patterns/destinations with respect to railroad right-of-way.

Safety factors to consider include, but are not limited to, the planning for grade separations for major thoroughfares, improvements to existing at-grade highway-rail crossings due to increase in traffic volumes and appropriate fencing to limit the access of trespassers onto the railroad right-of-way.

The above-mentioned safety improvements should be considered when approval is sought for the new development. Working with Commission staff early in the conceptual design phase will help improve the safety to motorists and pedestrians in the County.

If you have any questions in this matter, please call me at (415) 703-2795.

Very truly yours,

Kevin Boles
Utilities Engineer
Rail Crossings Engineering Section
Consumer Protection and Safety Division

cc: Pat Kerr, UP
Carol Harris, UP

APPENDIX B

DEVELOPMENT AGREEMENT

CAN0601

Orig. to City Clerk 1/11/08 BJ SB

10/18/07 bpa

RECORDING REQUESTED BY
FIRST AMERICAN TITLE
Accommodation
01713-029

RECORDING REQUESTED BY
AND WHEN RECORDED MAIL TO:
Lynn Tracy Nerland, Esq.
City Attorney
City of Antioch
City Hall, P.O. Box 5007
Antioch, CA 94531-5007

cc'd Joe Brandt

CONTRA COSTA Co Recorder Office
STEPHEN L. WEIR, Clerk-Recorder
DOC- 2007-0337114-00
Acct 6- First American Title
Thursday, DEC 13, 2007 08:00:00
FRE $0.00||
Ttl Pd $0.00 Nbr-0003942067
lee/R2/1-53

(Space Above Line For Recorder's Use Only)

FIRST AMENDED AND RESTATED DEVELOPMENT AGREEMENT BY AND BETWEEN

THE CITY OF ANTIOCH;

AND

PULTE HOMES CORPORATION,
A MICHIGAN CORPORATION,
dba DEL WEBB

Effective Date: December 13, 2007

12/11 as
12-10

FIRST AMENDED AND RESTATED DEVELOPMENT AGREEMENT

This FIRST AMENDED AND RESTATED DEVELOPMENT AGREEMENT (***"Agreement"***) is made and entered into this 13th day of December 2007, by and between the CITY OF ANTIOCH, a municipal corporation (***"City"***), and PULTE HOMES CORPORATION, a Michigan Corporation dba Del Webb (***"Del Webb"***). The City and Del Webb are from time to time hereinafter referred to individually as a "party" and collectively as the "parties."

The parties previously executed a Development Agreement approved by the City on October 25, 2005 (***"Original Development Agreement"***). The purpose of this First Amended and Restated Development Agreement is to update the Original Development Agreement to reflect new conditions and timing stemming from changed real estate market conditions, the need to provide temporary and permanent infrastructure improvements to the Dozier Libbey Medical High School site, and the potential alignment of Sand Creek Rd.

RECITALS.

This Agreement is predicated on the following facts which are incorporated into and made a part of this Agreement:

1.1 Code Authorization. The City of Antioch, a general law city, is authorized pursuant to Article 2.5 of Chapter 4 of Title 7 of the Government Code, Section 65864 through 65869.5 (the ***"Development Agreement Statute"***), to enter into binding development agreements with persons having a legal or equitable interest in real property for the development of such property in order to establish certainty in the development process.

1.2 Property Owner. Donald Williamson Charitable Trust and Shirley Perry as Trustee of the Shirley Perry Declaration of Living Trust (***"Property Owners"***) are the owners of certain real property located in the City of Antioch, County of Contra Costa, California, more particularly described in Exhibit A attached hereto and incorporated herein (the ***"Del Webb Property"*** or ***"Property"***), which is the subject of this Agreement. Said Property consists of approximately 194.5 acres of land in the Sand Creek Focus Area of the City's General Plan.

1.3 Del Webb's Interest in the Del Webb Property. Del Webb has an equitable interest in the Del Webb Property pursuant to a purchase contract (the ***"Del Webb Purchase Contract"***) Del Webb has entered into with the Property Owners. It is the intent of Del Webb to develop the Property into an active senior adult residential community (the ***"Del Webb Project"***) as a logical extension of the City's existing and planned development, in accordance with the City's 2003 General Plan. Del Webb intends to apply for entitlements to build not more than 535 active senior adult residential units on the Property.

1.4 Facilitation of Dozier Libbey Medical High School. The Del Webb Property is bordered on the southwest by an approximately 10-acre parcel (***"Dozier Libbey Medical High School Site" formerly called the Magnet School***) owned by the Antioch Unified School District (***"AUSD"***). The Del Webb Project will facilitate the development of the Dozier Libbey Medical High School Site as a medically focused Dozier Libbey Medical High School, targeted at high school age students interested in medical careers (***"Dozier Libbey Medical High School"***), by

providing certain infrastructure that will serve the Dozier Libbey Medical High School consistent with Sections 4.31 and 4.3.2 below. Such infrastructure will include both an access road (Primary Acess Road) along the westerly edge of the Dozier Libbey Medical High School Site as well as those portions of Sand Creek Road along the southerly edge of the Dozier Libbey Medical High School Site and which shall include, at a minimum, grading, paving, curbs, gutters, sidewalks, handicap ramps, sanitary sewer, water mains and fire hydrants, underground utilities, medians, median landscaping, signage and striping. Such infrastructure shall be stubbed to the southerly edge of the Dozier Libbey Medical High School Site. As set forth in more detail in Sections 4.3.1 and 4.3.2 and Exhibits C-1, C-2, and C-3, certain of these facilities are anticipated to be provided as temporary improvements to be constructed in advance of development of the Del Webb Project, while others represent permanent improvements anticipated to be constructed in conjunction with the Del Webb Project that will serve the Dozier Libbey Medical High School Site. AUSD has assumed responsibility itself for planning, design, and construction of an offsite permanent storm drainage connection for the Dozier Libbey Medical High School Site via the 84-inch City-owned lines currently running south along the western edge of the Dozier Libbey Medical High School Site.

1.5 **Assistance With State Route 4 Widening Project.** Del Webb has provided substantial assistance in securing federal and state funds for the State Route 4 Widening Project and has indicated its commitment to continuing to provide such support in the future.

1.6 **Intent of Parties.** Del Webb and the City have determined that the development of the Del Webb Project, in accordance with the Future Project Approvals (as defined in Section 2.17 below), as they may be granted by the City, is a development project for which this Agreement is appropriate. Further, should the Future Project Approvals be granted by the City, this Agreement will eliminate uncertainty in planning and provide for the orderly development of the Del Webb Property, insure progressive installation of necessary improvements, provide for public services appropriate to the development of the Del Webb Property, and otherwise achieve the goals and purposes of the Development Agreement Statute. In exchange for these benefits to the City, together with the public benefits Del Webb has agreed to provide in the event of the development of the Property, Del Webb desires to receive the assurance that, when it seeks Future Project Approvals, such approvals will be considered in accordance with the General Plan and that it may proceed with development of the Del Webb Project in accordance with the policies, objectives, land uses, standards, regulations, and designations set forth in the General Plan (as defined in Section 2.19 below).

1.7 **Public Hearings.** On July 18, 2007, the Planning Commission of the City of Antioch (***"Planning Commission"***), after giving notice pursuant to Government Code Sections 65867, 65090 and 65091 held a public hearing on Del Webb's application for this Agreement and recommended its adoption by the City Council. The City Council of the City (***"City Council"***), after providing public notice as required by law, held a public hearing on this Agreement on October 9, 2007.

1.8 **City Council Findings.** The City Council has found that this Agreement is consistent with the public health, safety, and general welfare of the City and that all its provisions are consistent with the General Plan, as well as all other applicable plans, policies and regulations of the City.

1.9 **Compliance with the California Environmental Quality Act.** At the public hearing on October 9, 2007, the City Council reviewed and considered the Second EIR Addendum. The City Council has found, pursuant to the Second EIR Addendum, that potential environmental impacts associated with approval of this Agreement were studied in the General Plan Update EIR and that no subsequent or supplemental EIR is required pursuant to CEQA. Neither the Second EIR Addendum nor the City Council's findings in support of it shall restrict the ability of the City to impose additional mitigation measures, including a reduction in the number of units, that it finds are necessary in connection with any project-level subsequent environmental review in connection with the Del Webb Project.

1.10 **City Ordinance.** On November 13, 2007, the City Council adopted Ordinance No. 2002-C-S approving this Agreement.

NOW, THEREFORE, the parties agree as follows:

Section 2 DEFINITIONS.

In this Agreement, unless the context otherwise requires:

2.1 ***"Agreement"*** means this First Amended and Restated Development Agreement.

2.2 ***"AUSD"*** means the Antioch Unified School District.

2.3 ***"City"*** means the City of Antioch, California.

2.4 ***"City Council"*** means the City Council of the City of Antioch, California.

2.5 **[reserved]**

2.6 **[reserved]**

2.7 ***"Conditions of Approval"*** means all conditions attached to the Future Project Approvals.

2.8 ***"Del Webb"*** means Pulte Homes Corporation, a Michigan corporation, dba Del Webb.

2.9 ***"Del Webb Project"*** has the meaning set forth in Section 1.3

2.10 ***"Del Webb Property"*** is identified and described in Exhibit A hereto.

2.11 ***"Del Webb Purchase Contract"*** has the meaning set forth in Section 1.3.

2.12 *"Development Agreement Statute"* means Title 7, Chapter 4, Article 2.5, Sections 65864 through 65869.5 of the Government Code.

2.13 *"Del Webb RDAs"* shall mean the RDAs necessary for Del Webb to build no more than 535 age-restricted senior housing units on the Del Webb Property beginning in 2009.

2.14 *"ECCRFFA"* means the East Contra Costa Regional Fee and Financing Authority.

2.15 *"Effective Date"* means the day and year first above written, as authorized by Ordinance No. 2002-C-S of the City of Antioch, which shall be 30 days after second reading of the ordinance.

2.16 *"Four Party Agreement"* means the Memorandum of Agreement Regarding Alignment of Sand Creek Road entered into as of December 15, 2005, among the City, Del Webb, the Antioch Unified School District, and Kaiser Foundation Hospitals regarding the alignment of Sand Creek Road, made pursuant to Section 10.11 of the Original Development Agreement. **The Four Party Agreement** has been superseded by the **Five Party Agreement** called the Memorandum of Agreement Regarding Alignment of Sand Creek Road through City of Antioch's Sand Creek Focus Area among the City, Del Webb, Antioch Unified School District, Kaiser and Property Owner dated December 13, 2007.

2.17 *"Future Project Approvals"* means any and all land use, environmental, and building approvals, permits and entitlements required for the Del Webb Project on the Del Webb Property including, without limitations, zoning approvals, Master Development Plan approvals, Residential Development Allocations, tentative and final subdivision maps, design review approvals, CEQA approvals, building permits, grading permits, and certificates of occupancy.

2.18 *"Future Discretionary Project Approvals"* shall include certification of an environmental impacts report as well as approval of the Master Development Plan, Residential Development Allocations, Tentative Subdivision Maps, and Planned Development zoning and all other discretionary approvals required for development of the Del Webb Project on the Del Webb Property.

2.19 *"General Plan"* means the City of Antioch General Plan, dated November 18, 2003, including any amendments authorized prior to the Effective Date of this Agreement.

2.20 *"General Plan Policies and Designations"* means any and all policies, objectives, land uses, standards, regulations and designations of the General Plan.

2.21 *"Kaiser"* means Kaiser Foundation Hospitals, a California nonprofit public benefit corporation.

2.22 *"Kaiser's Primary Access Road"* means the proposed north-south access road extending from the Southern Alignment of Sand Creek Road to the Mixed Use Site adjacent to the westerly edge of the Dozier Libbey Medical High School Site.

2.23 *"LBFM"* means a Land Based Financing District, such as a Community Facilities District (formed pursuant to the Mello-Roos Act, Government Code Section 53311, *et seq.*), a Landscape and Lighting District (formed pursuant to California Streets and Highways Code section 22500, *et seq.*) or another similar assessment district.

2.24 *"Dozier Libbey Medical High School"* has the meaning set forth in Section 1.4.

2.25 *"Dozier Libbey Medical High School Site"* has the meaning set forth in Section 1.4.

2.26 *"Mixed Use Site"* means a portion of that certain real property owned by Kaiser, located immediately to the west of the Del Webb Property and to the northwest of the Dozier Libbey Medical High School Site, consisting of approximately 18.5 acres, generally identified and described in Exhibit B hereto.

2.27 *"Original Development Agreement"* means the Development Agreement executed by the City and Del Webb and approved by the City on October 25, 2005.

2.28 *"Permanent School Improvements"* are those improvements illustrated in Exhibit C-3 of this Agreement, including all of the Dozier Libbey Medical High School's Sand Creek Road frontage improvements, which include the construction of the northern half of Sand Creek Road, sidewalk and landscaping along the Dozier Libbey Medical High School's Sand Creek Road frontage, and construction of the joint utility trench with all utilities along the Dozier Libbey Medical High School's Sand Creek Road frontage. The design of Sand Creek Road and size and type of utilities will be determined by the City as part of the Master Plan process for the Del Webb Project.

2.29 *"Planning Commission"* means the Planning Commission of the City of Antioch, California.

2.30 *"Planning Director"* means the Community Development Director of the City of Antioch, California, or his or her designee.

2.31 *"Property Owner"* means the Donald Williamson Partnership, a general partnership, and Shirley Perry as Trustee of the Shirley Perry Declaration of Living Trust.

2.32 *"RDA"* means a Residential Development Allocation, which a developer must obtain from the City before residential development entitlements or building permits can be issued for a residential development project pursuant to the Residential Development Allocation Program Ordinance adopted by the City Council on May 14, 2002 and amended on March 22, 2005; June 13, 2005; and June 27, 2006.

2.33 *"RDA Program"* means all of the policies, rules and regulations set forth by the City concerning the Residential Development Allocation Program, including but not limited to such policies, rules and regulations set forth in the General Plan and the Municipal Code.

2.34 *"Second EIR Addendum"* means the second Addendum to the City's November, 2003 General Plan Update Environmental Impact Report, dated May 2007, and considered in connection with approval of this Agreement.

2.35 *"Southern Alignment"* means the proposed alignment of Sand Creek Road identified and described in Exhibit B hereto, which is consistent with the alignment generally depicted in the City's General Plan.

2.36 *"State Route 4 Widening Project"* means a project proposed by the Contra Costa Transportation Authority (CCTA), in cooperation with the Federal Highway Administration and the California Department of Transportation, to widen State Route 4, its interchanges, and affected local roadways.

2.37 *"Temporary School Improvements"* means the temporary sewer, water, power, and access improvements described and illustrated in Exhibit C-1 to this Agreement to serve the Dozier Libbey Medical High School.

Section 3 EXHIBITS.

3.1 **Exhibits Incorporated.** The following documents are referred to in this Agreement, and attached hereto and incorporated herein as though set forth in full:

Exhibit Designation	Description
A.	Legal Description of the Del Webb Property
B.	Depiction of the Mixed Use Site and the Southern Alignment
C-1.	Plan for Temporary School Improvements
C-2	Temporary Easement Area on Del Webb Property
C-3.	Plan for Permanent School Improvements
C-4	Estimated Costs of Del Webb Improvements to Facilitate School
D.	[Reserved].
E.	Primary Access Road Plan View
F.	Primary Access Road Cross Section
G.	Secondary Access Road Plan View
H.	Secondary Access Road Cross Section
I.	Declaration of Covenant by Property Owner

Section 4 DEVELOPMENT PROGRAM.

4.1 Development of Del Webb Property. Del Webb shall develop the Del Webb Property and shall provide the public improvements, facilities and services required by the Future Project Approvals for the Del Webb Project and shall phase the construction of the Del Webb Project and related public improvements and facilities as provided in the Future Project Approvals, should they be granted by the City. If Del Webb at some future date elects not to move forward with the project, and formally withdraws any and all development entitlements discretionary and non discretionary for the Del Webb Property granted to them by City, then Del Webb shall be relieved of any obligations under this agreement from the date the City determines the development entitlements to be formally withdrawn by Del Webb. However, pursuant to Section 4.9, the Property Owner shall continue to have certain obligations.

4.2 Issuance of Certificates of Occupancy. No certificate of occupancy shall be issued for the Del Webb Project until January 1, 2009 or the completion of the State Route 4 Widening Project to A Street, whichever occurs first.

DEL WEBB OBLIGATIONS

4.3 Del Webb Obligations Relating to Dozier Libbey Medical High School

4.3.1. Temporary School Improvements: Del Webb agrees to design and plan at its own expense the Temporary School Improvements in consultation with AUSD, which shall have final approval authority over such temporary infrastructure.

(a) Designs and plans of the Temporary School Improvements shall be completed and conveyed to the AUSD by January 1, 2008.

(b) On or before January 31, 2008, Del Webb shall provide notice to AUSD of whether Del Webb elects to construct the Temporary School Improvements in accordance with this Section. Failure by Del Webb to provide notice shall be deemed an election not to construct such improvements. Notice of Del Webb's election to construct the Temporary School Improvements at its cost shall obligate Del Webb to construct the temporary sewer, water, and power utilities necessary to serve the Dozier Libbey Medical High School by June 30, 2008 and to construct the temporary access and road improvements necessary to serve the Dozier Libbey Medical High School Site by July 15, 2008. Such improvements would be completed as depicted in Exhibit C-2 attached hereto. Del Webb shall secure the written agreement of the owners of the Del Webb Property to provide easements reasonably necessary to complete such improvements in the areas generally depicted on Exhibit C-2 attached hereto. Del Webb shall not be responsible for obtaining easements necessary for such improvements across other properties neighboring the Del Webb Property. Acquisition of such easements shall be the responsibility of AUSD.

(c) In the event all Future Discretionary Project Approvals are granted by the City and become final (meaning all applicable statutes of limitations for challenges to such approvals under the California Environmental Quality Act or state or federal law) and Del Webb subsequently elects to proceed with the Del Webb Project, Del Webb

shall reimburse AUSD for all costs associated with AUSD's construction of the Temporary School Improvements (if Del Webb elected not to construct the Temporary School Improvements), including environmental mitigation costs and the costs of financing such improvements. Such reimbursement shall occur within 18 months of the recordation of the first final map for the Del Webb Project. Del Webb shall be deemed to have elected to proceed with the Del Webb Project if, within 180 days following the date on which the last of the federal and state resource agency permits required for development of the Del Webb Property are granted, Del Webb has not provided notice to the City pursuant to Section 10.5 of its intent not to proceed with the Project.

4.3.2 **Permanent School Improvements.** Del Webb, if it elects to proceed with the Del Webb Project, agrees to design, plan, and construct at its own expense the Permanent School Improvements as generally depicted in Exhibit C-3 consistent with the provisions of this Section. The City shall have approval authority over the Permanent School Improvements. The detailed design of Permanent Improvements will be determined concurrently with consideration and approval of off-site improvement plans for the Del Webb Project.

4.3.3 **Related Environmental Impacts.** Del Webb, if it elects to proceed with the Del Webb Project, shall reimburse AUSD for the costs incurred by AUSD in mitigating the environmental impacts associated with the construction of the Dozier Libby Medical High School, including Temporary and Permanent School Improvements. Such reimbursement shall occur within 18 months of the recordation of the first final map for the Del Webb Project.

4.4. **Del Webb Obligations Relating to Community Benefits.**

(a) **Open Space and Parks.** Del Webb shall provide approximately 50 acres of natural open space and parkland (less any dedications required by the City for rights of way to serve adjacent properties) within the residential community and south of Sand Creek Road to be used as public parks and open space with the understanding that additional open space acreage may be required through the CEQA process. It is anticipated that the open space south of Sand Creek may be preserved for habitat protection and open space through the resource agency permitting process for the Del Webb Project. Open Space parcels subject to such habitat protection shall not be operated and maintained by the City of Antioch.

(b) **Regional Trail.** Del Webb shall fund the cost of and construct a regional trail connecting the existing neighborhood park to the north of the Del Webb Project with the Sand Creek Road corridor. That portion of such trail which crosses the Del Webb Property north of Sand Creek Road shall be maintained by a homeowners' association to be formed by Del Webb; the remainder shall be maintained by a LBFM at no cost to the City.

(c) **City Economic Development Program.** Del Webb shall make $3,477,500 in contributions to be used toward the City's Economic Development Program, payable concurrently with the recordation of each final map for the Del Webb Project based upon the number of units included within such final map, relative to the total number of approved units.

(d) **City Facilities.** Del Webb shall make $3,477,500 in contributions for construction, improvements and/or operation of City facilities at Prewett Family Park, payable concurrently with the recordation of each final map for the Del Webb Project based upon the number of units included within such final map, relative to the total number of approved units.

(e) **Credit Against Contributions.** The City acknowledges that the timing and cost of the improvements to be completed by Del Webb described in Sections 4.3 above may provide benefit to the City's Economic Development and Facilities Programs. The estimate of the cost of providing such improvements is described in Exhibit C-4 attached hereto and incorporated herein. The City agrees to give consideration to Del Webb's contribution of such improvements when considering Del Webb's applications for the Del Webb RDAs.

4.5 **Del Webb Obligations Relating to Fees**

(a) **Regional Traffic Fee.** Del Webb shall pay the higher of any per unit regional traffic fee established by the East Contra Costa Regional Fee and Financing Authority for a senior housing unit in place at the time of building permit issuance or $8,400 per unit. The timing of Del Webb's payment of the fee shall be as agreed upon by ECCRFFA and Del Webb.

(b) **School Mitigation Fee.** Del Webb shall pay school mitigation fees in accordance with applicable laws.

4.6 **Del Webb Obligations Relating to Sand Creek Road.** The Del Webb obligations set forth below shall terminate and shall no longer bind Del Webb in the event that the Future Discretionary Project Approvals are not approved or otherwise do not become final or in the event Del Webb otherwise has elected in writing to the City that it will not to proceed with development of the Del Webb Property. In the event these obligations terminate as to Del Webb, they shall transfer to a future developer of the Del Webb Property subject to certain conditions as set forth in Section 4.9.

(a) At the time of construction, and prior to acceptance by the City, of any portion of Sand Creek Road which would abut the Primary Access Road, Del Webb shall construct the Primary Access Road. Planning, engineering, condemnation, environmental mitigation, and construction of the Primary Access Road and underlying utility improvements shall be at the sole expense of Del Webb. The location, layout, and specifications for the Primary Access Road are generally illustrated in plan view and with a cross section in Exhibit E and Exhibit F to this Agreement. However, the ultimate configuration and improvements may be revised at the sole discretion of the City Engineer upon review of a traffic study to be conducted at Del Webb's sole expense as part of the environmental review of the Del Webb Project.

(b) Del Webb shall make a payment to Kaiser in the amount of $180,000 to compensate Kaiser for costs associated with construction of the Secondary Access Road, including costs associated with planning, engineering, condemnation, environmental mitigation, and construction. The location, layout, and specifications for the Secondary

Access Road are generally illustrated in plan view and with a cross section in Exhibit G and Exhibit H to this Agreement. However, the ultimate configuration and improvements may be revised at the sole discretion of the City Engineer. The payment pursuant to this subsection shall be made to Kaiser upon the earlier of: (a) thirty-six (36) months following recordation of the first final subdivision map for the Del Webb Project; or (b) June 15, 2012. The amount of the payment required by this subsection shall be adjusted by 5% simple interest (not compounded) one year following the Effective Date and by 5% simple interest per year prorated on a monthly basis (not compounded) thereafter until the payment is made. The amount of the payment required by this subsection shall not be adjusted upward or downward in the event actual costs are higher or lower than the $180,000 identified in this subsection.

(c) Del Webb shall make a payment to Kaiser in the amount of $910,000 to compensate Kaiser for any potential diminution in value that Kaiser asserts would result from the Southern Alignment of Sand Creek Road. Such amount shall be payable to Kaiser upon the earlier of: (a) thirty-six (36) months following recordation of the first final subdivision map for the Del Webb Project; or (b) June 15, 2012. The amount of the payment required by this subsection shall be adjusted by 5% simple interest (not compounded) one year following the Effective Date and by 5% simple interest per year prorated on a monthly basis (not compounded) annually thereafter until the payment is made.

(d) Del Webb shall furnish verification satisfactory to the City of the payments to Kaiser as stipulated in Sections 4.6 (c) and (d) above.

4.7 [reserved]

CITY OBLIGATIONS

4.8 City Obligations Subject to the City granting approval of the Future Discretionary Project Approvals over which the City retains full discretion, and subject to Del Webb or a future developer proceeding with development of the Del Webb Property consistent with the Future Discretionary Project Approvals, or pursuant to a land plan that results in the Southern Alignment or other alignment of Sand Creek Road to the south of the Dozier Libbey Medical High School site, the City shall take all steps necessary, including through exercise of its permitting and police power authority, to locate Sand Creek Road along the Southern Alignment, the Kaiser/AUSD access road (east) along the western edge of the Dozier Libbey Medical High School Site between Sand Creek Road and the southern edge of the Kaiser Mixed Use Site (the "Primary Access Road"), and the Kaiser access road (west) at the southwestern corner of the Kaiser Mixed Use Site (the "Secondary Access Road") consistent with the locations and alignments depicted in Exhibits D-H to this Agreement, attached hereto and incorporated herein. All City costs relating to the establishment and acquisition of the full right of way for the Primary Access Road and those portions of the Southern Alignment of Sand Creek Road between the easterly edge of its intersection with Hillcrest Avenue and the westerly edge of thie intersection with the Primary Access Road as depicted in Exhibit B, D-H shall be borne by Del Webb or a future developer, subject to any additional obligations pursuant to any required

environmental mitigation. The descriptions of the Primary Access Road and the Secondary Access Road set forth herein are not intended to limit the City's discretion to approve the construction of additional Primary Access Road infrastructure or Secondary Access Road infrastructure if needed.

PROPERTY OWNER COVENANT

4.9. **Property Owner Covenant**. Property Owner shall concurrent with execution of this Agreement execute and deposit into escrow a Declaration of Covenant in the form of Exhibit I hereto (the "Declaration of Covenant") covenanting that, upon any future developer developing the Del Webb Property pursuant to a land plan that results in the Southern Alignment or other alignment of Sand Creek Road to the south of the Dozier Libbey Medical High School Site, such future developer of the Del Webb Property shall be required to do the following until December 8, 2024, regardless of the termination of this Agreement.

(a) Either: (a) at the time of construction, and prior to acceptance by the City, of any portion of Sand Creek Road along the Southern Alignment, construct the Primary Access Road at its own expense (including planning engineering, condemnation, and construction); or (b) in the event the Primary Access Road has been constructed at Kaiser's expense prior to development by such future developer of the Del Webb Property, make a payment to Kaiser in the amount of the actual documented cost of construction of said road up to but not to exceed $660,000 plus the actual costs of condemnation incurred by Kaiser related to the Primary Access Road. Such payment shall be made within 36 months following recordation of the first final subdivision map for the future developer's project. The location, layout, and specifications for the Primary Access Road are generally illustrated in plan view and with a cross section in Exhibit E and Exhibit F to this Agreement.

(b) Either: (a) at the time of construction, and prior to acceptance by the City, of any portion of Sand Creek Road along the Southern Alignment, construct the Secondary Access Road at its own expense (including planning engineering, condemnation, and construction); or (b) make a payment to Kaiser in the amount of $180,000. The location, layout and specifications for the Secondary Access Road are generally illustrated in plan view and with a cross section in Exhibit G and Exhibit H to this Agreement. The payment pursuant to this subsection shall be made to Kaiser within thirty-six (36) months following recordation of the first final subdivision map for the future developer's project. Kaiser shall not preclude such future developer from opting to develop the Secondary Access Road itself even assuming either that the Mixed Use Site has not yet been developed or Sand Creek Road has not yet been developed.

(c) Make a payment to Kaiser in the amount of $910,000 to compensate Kaiser for any potential diminution in value that Kaiser asserts would result from the Southern Alignment of Sand Creek Road. Such amount shall be payable to Kaiser within thirty-six (36) months following recordation of the first final subdivision map for the future developers' project.

(d) Reimburse AUSD for all costs associated with design, planning and construction of the Temporary School Improvements (including but not limited to financing costs) and either build the Permanent School Improvements or reimburse AUSD for all costs associated with construction of the Permanent School Improvements (including but not limited to financing costs). Any reimbursement to AUSD shall occur in full within 18 months of the recordation of the first final map for the project by the future developer. The financial obligation of any future developer of the Del Webb Property relating to Temporary School Improvements pursuant to this Section 4.9(d) shall not exceed $1,000,000, shall not be subject to the adjustment pursant to Section 4.9(e), and shall be supported through documentation showing the amounts actually paid by AUSD for construction of such improvements. AUSD shall provide full documentation of the costs incurred by it for construction of Temporary School Improvements at the time it makes any request for reimbursement pursuant to this Section.

(e) Any payments made by a future developer of the Del Webb Property as described in this section shall be subject to adjustment of 2% simple interest (not compounded) one year following the approval of any discretionary entitlement for a future development for a site plan that results in the Southern Alignment or any other alignment to the south of the Dozier Libbey Medical High School and 2% simple interest per year prorated on a monthly basis (not compounded) thereafter until the date of payment.

(f) The Declaration of Covenant shall be recorded by the escrow agent concurrent with this Agreement. The Declaration of Covenant shall run with the land so its burdens and benefits are binding on all successive owners of interests in the Del Webb Property until December 8, 2024 which corresponds with the expiration of the Kaiser Development Agreement.

(g) Failure of the Property Owner to execute or record this Covenant shall invalidate this Agreement if such breach is not cured within ten (10) days.

Section 5 DEL WEBB'S VESTED RIGHTS

5.1 Vested Right to Develop Consistent With General Plan Policies and Designations. Del Webb shall have the vested right to develop the Del Webb Property in accordance with: a) the General Plan Policies and Designations, including, but not limited to, the range of densities and intensities permitted under the General Plan Policies and Designations, and b) any future amendments by the City to the RDA Program that would increase the maximum number of age-restricted RDAs that could be issued annually so as to enable issuance of the Del Webb RDAs in 2009 through 2011; provided, however, that the number of permitted units for the Del Webb Property shall be no greater than 535 active senior adult housing units; and provided further that Del Webb acknowledges and agrees that the City retains all of its legislative and adjudicatory discretion to approve or deny the Future Project Approvals and the Del Webb RDAs and to impose required environmental mitigation.

5.2 Permitted Uses, Density and Intensity, Maximum Height and Size of Structures, and Reservation or Dedication of Land. The permitted uses of the Del Webb Property, the density and intensity of such uses, the maximum height and size of proposed

buildings, the provisions for the reservation or dedication of land for public purposes or payment of fees in lieu thereof, the construction, installation, and extension of public improvements, and the development standards and development guidelines shall be further set forth in the Future Project Approvals, should they be granted, and shall be consistent with this Agreement and the General Plan Policies and Designations.

5.3 **Application of Subsequently Enacted Rules, Regulations and Official Policies.** Development of the Del Webb Project is subject to Future Project Approvals, including both the Future Discretionary Project Approvals as well as those which are ministerial. The City shall exercise its normal scope of review at each stage of future review of the Del Webb Project. The City may adopt new or modified rules, regulations and official policies after the Effective Date and may review and process subsequent City actions required to implement the Del Webb Project consistent with such rules, regulations and official policies; provided, however, that such new or modified rules, regulations and official policies shall be applicable to the Del Webb Project and the Del Webb Property only to the extent that such application will not explicitly conflict with Del Webb's vested right to the General Plan Policies and Designations granted pursuant to this Agreement.

Section 6 COOPERATION-IMPLEMENTATION.

6.1 **Processing.** If necessary or required, upon satisfactory completion by Del Webb of all required preliminary actions and payment of appropriate processing fees, if any, the City shall promptly commence and timely proceed to complete all steps required or necessary for the consideration of the Future Project Approvals including, but not limited to, the following:

(a) **Public Hearings.** Scheduling, convening and concluding all required public hearings in an expeditious manner consistent with the rules, regulations and official policies then in effect.

(b) **Concurrent Processing of Tentative Map and Final Development Plan.** Notwithstanding any ordinance, rule, or regulation to the contrary and in recognition of the need for timely provision of public infrastructure (including but not limited to infrastructure designed to facilitate the Dozier Libbey Medical High School) to be provided by Del Webb in connection with development of the Del Webb Project, the City agrees it is appropriate to accept Del Webb's application for the Del Webb RDAs in 2007 and to process such application concurrently such that the Del Webb RDAs may be considered for final approval at the same public hearings as the Future Project Approvals. Pursuant to this provision, upon completion of the Environmental Impact Report for the Del Webb Project, the City Council would have the discretion to approve the Master Development Plan, Del Webb RDAs, Planned Development zoning, and Tentative Subdivision Maps as early as its first meeting in January, 2008. This provision also authorizes the Planning Commission to consider and provide recommendations on the Del Webb RDAs and the Future Project Approvals prior to January, 2008. A Preliminary Planned Development application may be reviewed by the City Council at any time, including before certification of the Environmental Impact Report.

(c) **Duties of City: Cooperation/Implementation** Processing in an timely manner, all maps, plans, annexation requests, land use permits, building plans and specifications and other plans relating to the development of the Del Webb Project, including, but not limited to, all zoning, preliminary and final development plans, tentative maps, parcel maps, final maps, resubdivisions, amendments to maps, subdivision improvement agreements, lot line adjustments, encroachments, grading and building permits, associated zoning actions and related matters as necessary for the completion of the development of all lots and parcels comprising the Del Webb Project and that are in conformance with the rules, regulations and official policies then in effect.

(1) **Formation of Land Based Financing Mechanism (LBFM).** Del Webb and the City shall cooperate to establish a LBFM to finance the design, acquisition, installation, construction of some or all of the major public facilities for development of on- and off-site infrastructure serving the Del Webb Project and other properties that may be developed within the Sand Creek Focus Area of the City's General Plan. Del Webb shall contact those landowners within the Sand Creek Focus Area currently anticipated to develop their properties for inclusion in the LBFM, shall jointly retain services of those consultants (including engineers and land use economists) necessary for formation of the LBFM, and shall prepare all documentation required for formation of the LBFM. The LBFM shall be authorized to levy an annual special tax upon property within the boundaries of the LBFM with the goal that the total annual taxes and assessments levied on such property shall not exceed 1.75% of the property's assessed value. The City shall not be liable for or obligated to pay any costs or expenses in connection with the LBFM except to the extent monies are available from LBFM funds specifically authorized by law for payment of such costs or expenses.

(d) **Duties of Del Webb: Cooperation/Implementation.** Del Webb shall, in a timely manner, provide the City with all documents, applications, plans and other information necessary for the City to carry out its obligations hereunder and shall cause Del Webb's planners, engineers, and all other consultants to submit in a timely manner all required materials and documents therefor, including the formation of an LBFM. It is the express intent of the parties to cooperate and diligently work to implement any zoning, tentative map, final development plan and/or land use, grading or building permits or approvals which are necessary or desirable in connection with the development of the Del Webb Project in conformance with the Future Project Approvals.

(e) **Outside Consultants.** If mutually agreed to by the parties, and if paid for by Del Webb, the City may engage outside consultants of its choice if necessary in order to comply with this Section.

6.2 **Other Governmental Permits and Fees.** In addition, Del Webb shall apply in a timely manner for such other permits and approvals as may be required by other governmental or quasi-governmental agencies (including, without limitation, districts and special districts providing flood control, sewer and fire protection), having jurisdiction over the Del Webb Project in connection with the development of, or provision of services to, the Del Webb Project. The City shall cooperate with Del Webb in its efforts to obtain such permits and approvals and shall, from time to time at the request of Del Webb, attempt with due diligence and in good faith to enter into binding agreements with any such entity necessary to assure the availability of such permits and approvals or services, provided such agreements are reasonable and not detrimental to the City.

6.3 **Cooperation and Indemnification in the Event of Legal Challenge.** In the event of any legal or equitable action or other proceeding instituted by a third party, other governmental entity or official arising from this Agreement, the Future Project Approvals or compliance with the California Environmental Quality Act (CEQA) by the Del Webb Project, the parties hereby agree to cooperate in defending said action or proceeding. Del Webb agrees to indemnify, defend and hold harmless the City, its Council Members, officials, employees and agents arising from any such action arising from this Agreement, the Future Project Approvals or compliance with CEQA. In the event that the City and Del Webb are unable to select mutually agreeable legal counsel to defend such action or proceeding, each party may select its own legal counsel. Del Webb, as the real party in interest, shall bear its own costs of defense in any such action, and shall reimburse the City for all costs and attorneys' fees expended by the City in defense of any such action or other proceeding. To the extent legal costs or attorneys' fees are awarded to the City as a prevailing party, all such costs or fees shall be returned to Del Webb, minus any in-house legal or staff costs. Only the indemnification obligation relating to any action arising from this Agreement or CEQA compliance relating to this Agreement shall survive termination of this Agreement.

6.4 **Eminent Domain: Indemnification.** The City may consider the use of its eminent domain powers in connection with public rights of way and improvements; however, the use of eminent domain shall be in the sole and absolute discretion of the City. Del Webb acknowledges the City must comply with Title 7 of the California Code of Civil Procedure prior to exercising its eminent domain powers. Del Webb agrees to reimburse the City for all costs and attorneys' fees that may be expended by the City should the City exercise such powers in accordance with such laws. Del Webb further agrees to indemnify, defend and hold harmless the City, its Council Members, officials, employees and agents for any claims by current or future owners of the Royal Formosa Property relating to the City's approval or implementation of the Future Project Approvals or to the Southern Alignment. Del Webb agrees to indemnify, defend and hold harmless AUSD and its board members, officials, employees and agents for any claims by current or future owners of the Royal Formosa Property relating to the City's approval or implementation of the Southern Alignment. The indemnification obligations shall survive termination of this Agreement. However, these obligations shall no longer bind Del Webb in the event either the Future Project Approvals are not granted or otherwise do no become final, or in the event Del Webb provides notice to the City pursuant to Section 10.5 of its election not to proceed with the Del Webb Project.

Section 7 APPLICATION, EFFECT AND AMENDMENT OF AGREEMENT.

7.1 **Property Subject to the Agreement.** This Agreement applies to and governs the development of the Del Webb Property.

7.2 **Term of Agreement.** Except as provided in this Section, the term of this Agreement shall commence upon the Effective Date hereof and shall expire 10 years thereafter (***"Term"***), unless extended pursuant to the terms hereof. The initial 10-year term has been established by the parties as a reasonable estimate of the time required to develop the Del Webb Project and the Dozier Libbey Medical High School, including all onsite and offsite improvements, and to obtain the public benefits associated with such development. To effectuate the purpose of this Agreement, the Term of the Agreement may be extended as is convenient or necessary by mutual agreement of the City and Del Webb, in writing, for up to two five (5) year additional periods. Expiration of this Agreement shall not affect any rights of Del Webb arising from the Future Project Approvals.

7.3 **Assignment.** This Agreement may be assigned to another developer subject to the following provisions:

(a) The City must approve the assignment in advance in writing.

(b) The City has full discretion whether to approve the assignment of this Agreement to a party other than Del Webb.

(c) In the event the Agreement is assigned, all of the terms, requirements, obligations, and conditions of this Agreement shall be applicable.

(d) The City may condition an assignment of the Agreement through an Amendment to this Agreement.

(e) In assigning the Agreement to a developer proposing a non-age restricted residential project, the developer shall agree to fully mitigate for any additional impacts, including but not limited to, any school impacts as determined by the City upon consultation with AUSD. A non-age restricted residential project shall require further environmental and entitlement review with the maximum number of units to be determined by the City through the Master Plan entitlement process.

7.4 **Amendment or Cancellation of Agreement.** This Agreement may be amended from time to time by the mutual consent of the parties hereto, but only in the manner set forth in Government Code Sections 65867, 65867.5 and 65858. The terms ***"this Agreement"*** or ***"Development Agreement"*** used herein shall include any such amendment properly approved and executed. Any amendment to this Agreement which does not relate to the Term, permitted uses, provisions for reservation and dedication of land, or conditions, terms, restrictions and requirements relating to subsequent discretionary actions, monetary contributions by Del Webb or the Del Webb Property Owner or any conditions or covenants relating to the use of the Del Webb Property shall not require notice or public hearing pursuant to Government Code Sections 65867, 65867,5 and 65858. This Agreement may be cancelled at any time by mutual written consent of the parties.

7.5 **Binding Effect of Agreement.** The provisions of this Agreement shall constitute covenants or servitudes which shall run with the land comprising the Del Webb Property and the burdens and benefits hereof shall bind and inure to the benefit of all estates and interests in the Del Webb Property.

Section 8 CONFLICTS OF LAW.

8.1 **Conflict of City and State or Federal Laws.** Nothing in this Agreement shall preclude the application to the development and use of the Del Webb Property of any changes to the City's laws, regulations, plans or policies, the terms of which are specifically mandated and required by changes in the state or federal laws or regulations as provided in Government Code § 65869.5. If any state or federal governmental agency or legislative body passes any state or federal law or regulation after the Effective Date which prevents or precludes compliance with one or more provisions of this Agreement, then the provisions of this Agreement shall, to the extent feasible, be modified or suspended as may be necessary to comply with such new law or regulation. Immediately after enactment of any such law or regulation, the parties shall meet and confer in good faith to determine the feasibility of any such modification of suspension based on the effect such modification or suspension would have on the purposes and intent of this Agreement.

8.2 **Council Hearings.** After the parties have met and conferred pursuant to Section 9.1, regardless of whether the parties have reached an agreement of the effect of the change upon this Agreement of the state or federal law or regulation, the matter shall be scheduled for hearing before the City Council. Written notice of such hearing shall be given pursuant to Government Code Section 65867 or then-applicable statute. The City Council, at such hearing, shall determine the exact modification or suspension necessitated by such state or federal law or regulation. Del Webb, at the hearing, shall have the right to offer oral and written testimony.

Section 9 ANNUAL REVIEW, DEFAULT, REMEDIES AND TERMINATION

9.1 **Annual Review.** At the first City Council meeting in August of each year during the term of this Agreement beginning in 2008, the City shall review report and determine the extent of good faith compliance by Del Webb with the terms of this Agreement. Such periodic review shall be limited in scope to compliance with the terms of this Agreement pursuant to Government Code Section 65865.1. At the conclusion of such meeting, the City shall make written findings and determinations, on the basis of substantial evidence, as to whether or not Del Webb has complied in good faith with the terms and conditions of this Agreement. If the City finds and determines, on the basis of substantial evidence (pursuant to Government Code Section 65865.1) that Del Webb has not complied with such terms and conditions, (a) the City may terminate or modify this Agreement by giving notice of its intention to do so in the manner set forth in Section 9.2 of this Agreement and Government Code Sections 65867 and 65868; or (b) the City may impose conditions, fees or exactions necessary to comply with such terms and conditions. The City shall provide to Del Webb, in the manner provided for notices under this Agreement, a copy of all public staff reports, documents and related exhibits concerning Del Webb's performance hereunder at least ten (10) days prior to any such periodic review. Del Webb shall be permitted an opportunity to respond to the City's evaluation of its performance, either orally at a public hearing or in a written statement, at Del Webb's election. Such response shall be made to the City Council or, if the matter has been referred to the Planning Commission,

to the Planning Commission. In the event the City fails to either: (1) hold the annual review meeting; or (2) notify Del Webb in writing (following the scheduled date of the review meeting) of the City's determination as to compliance or noncompliance with the terms of this Agreement, and such failure remains uncured as of December 31 of the same year, such failure shall be deemed an approval by the City of Del Webb's good faith compliance with the terms of this Agreement.

9.2 **Default.** In the event of default or breach of this Agreement or of any of its terms or conditions, the party alleging such default or breach shall give the defaulting party not less than thirty (30) days notice of default in writing, unless the parties extend such time by mutual consent in writing. The time of notice shall be measured from the date of certified mailing. The notice of default shall specify the nature of the alleged default, and, where appropriate, the manner and period of time in which said default may be satisfactorily cured. If the nature of the alleged default is such that it cannot reasonably be cured within such 30-day period, the commencement of the cure within such time period and the diligent prosecution to completion of the cure shall be deemed a cure within such period. During any period of curing, the party charged shall not be considered in default for the purposes of termination or institution of legal proceedings. If the default is cured, then no default shall exist and the noticing party shall take no further action.

(a) **Option to Institute Legal Proceedings or to Terminate.** After proper notice and the expiration of said cure period, the noticing party, at its option, may institute legal proceedings or give notice of intent to terminate this Agreement pursuant to Government Code Section 65868. Following notice of intent to terminate, the matter shall then be scheduled for consideration and review by the City Council, within thirty (30) days, in the manner set forth in Government Code Sections 65867 and 65868, as amended.

(b) **Notice of Termination.** Following consideration of the evidence presented before the City Council, either party alleging a default by the other party may, at its option, give written notice of termination of this Agreement to the other party by certified mail. Written notice of termination of this Agreement shall be effective immediately upon certified mailing to the defaulting party.

(c) **Waiver.** Failure or delay in giving notice of default pursuant to this Section shall not constitute a waiver of any default. Except as otherwise expressly provided in this Agreement, any failure or delay by the other party in asserting any of its rights or remedies as to any default shall not operate as a waiver of any default or of such rights or remedies or deprive such party of its right to institute and maintain any actions or proceedings which it may deem necessary to protect, assert or enforce any such rights or remedies.

(d) **Remedies Cumulative.** Any rights or remedies available to the non-defaulting party under this Agreement and any other rights or remedies that such party may have at law or in equity upon a default by the other party under this Agreement shall be distinct, separate, and cumulative rights and remedies available to such non-defaulting party and none of such rights or remedies, whether or not exercised by the non-defaulting party, shall be deemed to exclude any other rights or remedies available

to the non-defaulting party. The non-defaulting party may, in its discretion, exercise any and all of its rights and remedies, at once or in succession, at such time or times as the non-defaulting party considers appropriate.

(e) **No Damage Relief Against City.** The parties acknowledge that City would not have entered into this Agreement had it been exposed to damage claims from Del Webb or Property Owner for any breach thereof. As such, the parties agree that in no event shall Del Webb or Property Owner be entitled to recover damages against City for breach of this Agreement. All other remedies, including injunctive relief, shall be available against the City and the recovery of attorneys' fees from the City pursuant to Section 9.6 shall be available to all parties as well.

(f) **Developer Default.** No building permit shall be issued or building permit application accepted for any structure on the Del Webb Property after Del Webb or Property Owners is determined by the City to be in default of the terms and conditions of this Agreement, and until such default is thereafter cured by Del Webb or Property Owner or is waived by City.

(g) **Retention of Benefits.** If City terminates this Agreement because of Del Webb's or Property Owner's default, City and AUSD shall retain any and all benefits, including money, land, or improvements.

9.3 **Enforced Delay, Extension of Time of Performance.** In addition to specific provisions of this Agreement, performance by either party hereunder shall not be deemed to be in default, where delays or defaults are due to war, insurrection, strikes, walk-outs, riots, floods, earthquakes, fires, casualties, acts of God, governmental restrictions imposed or mandated by other governmental entities, enactment of conflicting state or federal laws or regulations, new or supplementary environmental regulations, litigation, or similar bases for excused performance.

9.4 **Institution of Legal Action.** In addition to any other rights or remedies, either party may institute legal action to cure, correct or remedy any default, to enforce any covenants or agreements herein or to enjoin any threatened or attempted violation thereof, to recover damages for any default, or to obtain any remedies consistent with the purpose of this Agreement.

9.5 **Applicable Law.** This Agreement shall be construed and enforced in accordance with the laws of the state of California.

9.6 **Attorneys' Fees.** Should legal action be brought for breach of this Agreement or to enforce any provisions herein, the prevailing party of such action shall be entitled to reasonable attorneys' fees, court costs, and such other costs as may be fixed by the court. Reasonable attorneys' fees of the City Attorney's Office shall be based on comparable fees of private attorneys practicing in the San Francisco Bay Area.

9.7 **Third-Party Beneficiary.** The parties agree that the Antioch Unified School District is an intended third-party beneficiary of this Agreement with the right to exercise any remedies afforded by the Agreement and under law against Del Webb or Property Owner or their

successors in interest regarding breaches of the Agreement related to Antioch Unified School District.

Section 10 MISCELLANEOUS PROVISIONS

10.1 Rules of Construction. The singular includes the plural; ***"shall"*** is mandatory, and ***"may"*** is permissive. This Agreement has been drafted jointly, and reviewed by the parties and their attorneys and, therefore, shall not be construed in favor of or against a party that may have drafted any particular term or provision. Prior versions or drafts of this Agreement shall not be used to interpret the meaning or intent of this Agreement or any provision hereof.

10.2 Severability. Should all or any portion of any provision of this Agreement be held unenforceable or invalid for any reason, but the remainder of the Agreement can be enforced without failure of material consideration to either party, then the remaining portions or provisions shall be unaffected.

10.3 Force Majeure. Neither party shall be held responsible or liable for an inability to fulfill any obligation under this Agreement by reason of an act of God, natural disaster, accident, breakage or failure of equipment, strikes, lockouts or other labor disturbances or disputes of any character, interruption of services by suppliers thereof, unavailability of materials or labor, rationing or restrictions on the use of utilities or public transportation whether due to energy shortages or other causes, war, civil disturbance, riot, litigation or other legal action by a third party arising out of or relating to this Agreement, the Del Webb Project or the Del Webb Property, or by any other occurrence that is beyond the control of that party ("***Force Majeure***"). Any party relying on a Force Majeure to excuse non-performance of an obligation under this Agreement shall give the other party reasonable notice thereof and the parties shall use their best efforts to minimize potential adverse effects from such Force Majeure, including, without limitation, subcontracting the obligations of the party claiming such Force Majeure to a third party.

10.4 Entire Agreement, Waivers, Amendments, Precedence. Other than as noted in references to the Five Party Agreement (identified in Section 2.16), this Agreement constitutes the entire understanding and agreement of the parties concerning the subject matter hereof. This Agreement integrates all of the terms and conditions mentioned herein or incidental hereto, and supersedes all negotiation or previous agreements between the parties with respect to all or any part of the subject matter hereof. To the extent that there are conflicts or inconsistencies between this Agreement and any prior agreement or any City ordinance, regulation, plan, rule, policy or procedure, the provisions of this Agreement shall prevail. All waivers of the provisions of this Agreement must be in writing and signed by the appropriate authorities of the City and Del Webb. All amendments which are authorized in the manner provided by law must be in writing, signed by the appropriate authorities of the City and Del Webb, in a form suitable for recording in the Office of the Recorder, County of Contra Costa. Any such amendments shall be promptly recorded. Upon the completion of performance of this Agreement or its earlier revocation and termination, a statement evidencing said completion or revocation signed by the appropriate agents of Del Webb and the City shall be recorded in the Official Records of Contra Costa County, California.

10.5 **Notices.** All notices, demands and correspondence required or provided for under this Agreement shall be in writing and delivered in person or sent by certified mail, postage prepaid. Notices to the City shall be addressed as follows:

City Manager
City of Antioch
Third & "H" Streets
P.O. Box 5007
Antioch, CA 94531-5007

Notices to Property Owners shall be addressed as follows:

Donald Williamson
2246 B Monument Blvd
Pleasant Hill, CA 94523

Notices to Del Webb shall be addressed as follows:

President
Pulte Home Corporation
dba Del Webb
6210 Stoneridge Mall Road, 5th Floor
Pleasanton, CA 94588

cc: Bingham McCutchen LLP
Attn: Cecily T. Talbert
1333 N. California Boulevard, Suite 210
Walnut Creek, CA 94596
Fax No.: (925)975-5390
Phone No.: (925)975-5339

10.6 **Administrative Costs.** Del Webb agrees to pay reasonable fees to offset administrative costs incurred by the City in administering this Agreement.

10.7 **Project is a Private Undertaking.** It is specifically understood and agreed to by and between the parties hereto that: (1) the subject development is a private development; (2) the City has no interest or responsibilities for or duty to third parties concerning any improvements until such time and only until such time that the City accepts the same pursuant to the provisions of this Agreement or in connection with the various subdivision map approvals; (3) Del Webb shall have full power over and exclusive control of the Del Webb Project subject only to the limitations and obligations of Del Webb under this Agreement; and (4) the contractual relationship between the City and Del Webb is such that Del Webb is an independent contractor and not an agent of the City.

10.8 **Further Assurances and Acts.** Each party shall perform all acts and execute all documents and instruments that may be necessary or convenient to carry out its obligations under this Agreement.

10.9 Time of the Essence. Time is of the essence in the performance of each party's respective obligations under this Agreement.

10.10 Incorporation of Recitals. The recitals are true and correct and are specifically incorporated into this Agreement.

/
/
/

IN WITNESS WHEREOF, this Agreement has been executed by the parties on the day and year first above written, as authorized by Ordinance No 2022-05 of the City Council.

"City"

CITY OF ANTIOCH,
a municipal corporation:

By _____
Donald P. Freitas, Mayor

Approved as to form:

_____
LYNN TRACY NERLAND
City Attorney

"Del Webb"

PULTE HOMES CORPORATION,
a Michigan corporation,
dba DEL WEBB:

By _____

Title: Attorney in Fact

ACKNOWLEDGMENT BY PROPERTY OWNERS

Property Owners understands and acknowledges that the burdens and benefits of the Agreement constitute covenants or servitudes which shall run with the land comprising the Del Webb Property and that the burdens and benefits of the Agreement are binding on the Property Owners and their successors and assigns.

"Property Owners"

DONALD WILLIAMSON CHARITABLE TRUST and SHIRLEY PERRY as TRUSTEE OF THE SHIRLEY PERRY DECLARATION of LIVING TRUST:

By _____
Donald Williamson

By _____
Shirley Perry

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

State of California
County of Contra Costa }

On November 15 2007 (Date) before me, Sharon P. Daniels, Notary Public, (Name and Title of Officer (e.g., "Jane Doe, Notary Public"))

personally appeared Donald P. Freitas (Name(s) of Signer(s))

☒ personally known to me

☐ (or proved to me on the basis of satisfactory evidence)

to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

SHARON P. DANIELS
Commission # 1738767
Notary Public - California
Contra Costa County
My Comm. Expires Apr 14, 2011

Place Notary Seal Above

Signature Sharon P. Daniels
Signature of Notary Public

OPTIONAL

Though the information below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent removal and reattachment of this form to another document.

Description of Attached Document
Title or Type of Document: First Amended + Restated Develop. Agreement - City of Antioch + Pulte Homes

Document Date: _____ Number of Pages: _____

Signer(s) Other Than Named Above: _____

Capacity(ies) Claimed by Signer(s)

Signer's Name: _____
☐ Individual
☐ Corporate Officer — Title(s): _____
☐ Partner — ☐ Limited ☐ General
☐ Attorney in Fact
☐ Trustee
☐ Guardian or Conservator
☐ Other: _____
Signer Is Representing: _____

RIGHT THUMBPRINT OF SIGNER
Top of thumb here

Signer's Name: _____
☐ Individual
☐ Corporate Officer — Title(s): _____
☐ Partner — ☐ Limited ☐ General
☐ Attorney in Fact
☐ Trustee
☐ Guardian or Conservator
☐ Other: _____
Signer Is Representing: _____

RIGHT THUMBPRINT OF SIGNER
Top of thumb here

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CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

State of California
County of Alameda } ss.

On Oct. 26, 2007 (Date) before me, Jeanne Miller. Notary Public (Name and Title of Officer (e.g., "Jane Doe, Notary Public"))

personally appeared Daniel J. Carroll (Name(s) of Signer(s))

☒ personally known to me
☐ proved to me on the basis of satisfactory evidence

to be the person(s) whose name(s) is/~~are~~ subscribed to the within instrument and acknowledged to me that he/~~she/they~~ executed the same in his/~~her/their~~ authorized capacity(~~ies~~), and that by his/~~her/their~~ signature(~~s~~) on the instrument the person(~~s~~), or the entity upon behalf of which the person(~~s~~) acted, executed the instrument.

WITNESS my hand and official seal.

Jeanne Miller
Signature of Notary Public

JEANNE MILLER
Commission # 1739088
Notary Public - California
Alameda County
My Comm. Expires May 9, 2011

OPTIONAL

Though the information below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent removal and reattachment of this form to another document.

Description of Attached Document City of Antioch & Pulte Homes

Title or Type of Document: First Amended + Restated Development Agreement

Document Date: December 13, 2007 Number of Pages: 42

Signer(s) Other Than Named Above: _____

Capacity(ies) Claimed by Signer

Signer's Name: _____

☐ Individual
☐ Corporate Officer — Title(s): _____
☐ Partner — ☐ Limited ☐ General
☐ Attorney-in-Fact
☐ Trustee
☐ Guardian or Conservator
☐ Other: _____

Signer Is Representing: _____

RIGHT THUMBPRINT OF SIGNER
Top of thumb here

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IN WITNESS WHEREOF, this Agreement has been executed by the parties on the day and year first above written, as authorized by Ordinance No. 2062-C-S of the City Council.

"City"

CITY OF ANTIOCH,
a municipal corporation:

By _____
Donald P. Freitas, Mayor

Approved as to form:

_____
LYNN TRACY NERLAND
City Attorney

"Del Webb"

PULTE HOMES CORPORATION,
a Michigan corporation,
dba DEL WEBB:

By _____

Title:_____

ACKNOWLEDGMENT BY PROPERTY OWNERS

Property Owners understands and acknowledges that the burdens and benefits of the Agreement constitute covenants or servitudes which shall run with the land comprising the Del Webb Property and that the burdens and benefits of the Agreement are binding on the Property Owners and their successors and assigns.

"Property Owners"

DONALD WILLIAMSON CHARITABLE TRUST and SHIRLEY PERRY as TRUSTEE OF THE SHIRLEY PERRY DECLARATION of LIVING TRUST:

By _____
~~Donald Williamson~~ CHARITABLE TRUST
BASIL WILLIAMS

See attached Calif. Acknowledgment

By _____
Shirley Perry

H:\Community Development\Magnet School-Kaiser-Pulte\Pulte DA\10-09-07 clean Pulte-Del Webb DA.DOC

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

State of California
County of CONTRA COSTA } ss.

On 17 OCTOBER 2007 (Date), before me, LYNN S. CONFETTI, NOTARY PUBLIC (Name and Title of Officer (e.g., "Jane Doe, Notary Public")),

personally appeared VASILI MILLIAS (Name(s) of Signer(s)),

☐ personally known to me

☑ ~~proved~~ to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/~~are~~ subscribed to the within instrument and acknowledged to me that he/~~she/they~~ executed the same in his/~~her/their~~ authorized capacity(~~ies~~), and that by his/~~her/their~~ signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

Signature of Notary Public

LYNN S. CONFETTI
COMM. # 1746050
NOTARY PUBLIC - CALIFORNIA
CONTRA COSTA COUNTY
My Comm. Expires June 17, 2011

Place Notary Seal Above

OPTIONAL

Though the information below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent removal and reattachment of this form to another document.

Description of Attached Document

Title or Type of Document: FIRST AMENDED AND RESTATED DEVELOPMENT AGREEMENT BY AND BETWEEN THE CITY OF ANTIOCH AND PULTE HOMES CORPORATION

Document Date: 17 Oct. 2007 Number of Pages: TWENTY-THREE (23)

Signer(s) Other Than Named Above: DANIEL P. FREITAS AND LYNN TRACY NERLAND

Capacity(ies) Claimed by Signer(s)

Signer's Name: VASILI MILLIAS
☑ Individual
☐ Corporate Officer — Title(s): _____
☐ Partner — ☐ Limited ☐ General
☐ Attorney in Fact
☐ Trustee
☐ Guardian or Conservator
☐ Other: _____
Signer Is Representing: _____

RIGHT THUMBPRINT OF SIGNER
Top of thumb here

Signer's Name: _____
☐ Individual
☐ Corporate Officer — Title(s): _____
☐ Partner — ☐ Limited ☐ General
☐ Attorney in Fact
☐ Trustee
☐ Guardian or Conservator
☐ Other: _____
Signer Is Representing: _____

RIGHT THUMBPRINT OF SIGNER
Top of thumb here

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STATE OF CALIFORNIA
COUNTY OF Contra Costa

On 10-24-07, before me, Kelly Lisa,

Notary Public, personally appeared Shirley Perry

☐ personally known to me - OR - ☑ proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.



WITNESS my hand and official seal.

Kelly Lisa

(This area for official notarial seal)

DESCRIPTION OF ATTACHED DOCUMENT

DESCRIPTION OF DOCUMENT (OPTIONAL)

STATE OF CALIFORNIA
COUNTY OF _____

On _____ before me, _____,

Notary Public, personally appeared _____

☐ personally known to me - OR - ☐ proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

(This area for official notarial seal)

DESCRIPTION OF ATTACHED DOCUMENT

DESCRIPTION OF DOCUMENT (OPTIONAL)

ESCROW NO. 54709-717438-07
TITLE ORDER NO. 54709-717438-07

EXHIBIT A

LEGAL DESCRIPTION

Real property in the City of Antioch, County of Contra Costa, State of California, described as follows:

THE NORTHWEST ¼ AND THE NORTH ½ OF THE SOUTHWEST ¼ OF SECTION 9, TOWNSHIP 1 NORTH, RANGE 2 EAST, MOUNT DIABLO BASE AND MERIDIAN.

EXCEPTING THEREFROM:

1. THAT PARCEL OF LAND DESCRIBED IN THE DEED FROM MARY A. SHANNON, ET AL, TO R.T. WHITEHOUSE DATED SEPTEMBER 29, 1888 AND RECORDED OCTOBER 5, 1888 IN VOLUME 52 OF DEEDS AT PAGE 273, AS FOLLOWS:

"A NARROW STRIP OF LAND CONTAINING ABOUT ONE-HALF ACRE MORE OR LESS AND SITUATED SOUTH OF AND ADJACENT TO THE LINE OF DIVISION FENCE BETWEEN THE LANDS OF THE PARTIES HERETO AND BEING ON THE SOUTHWEST QUARTER OF SECTION NINE, TOWNSHIP ONE NORTH OF RANGE TWO EAST, MOUNT DIABLO MERIDIAN."

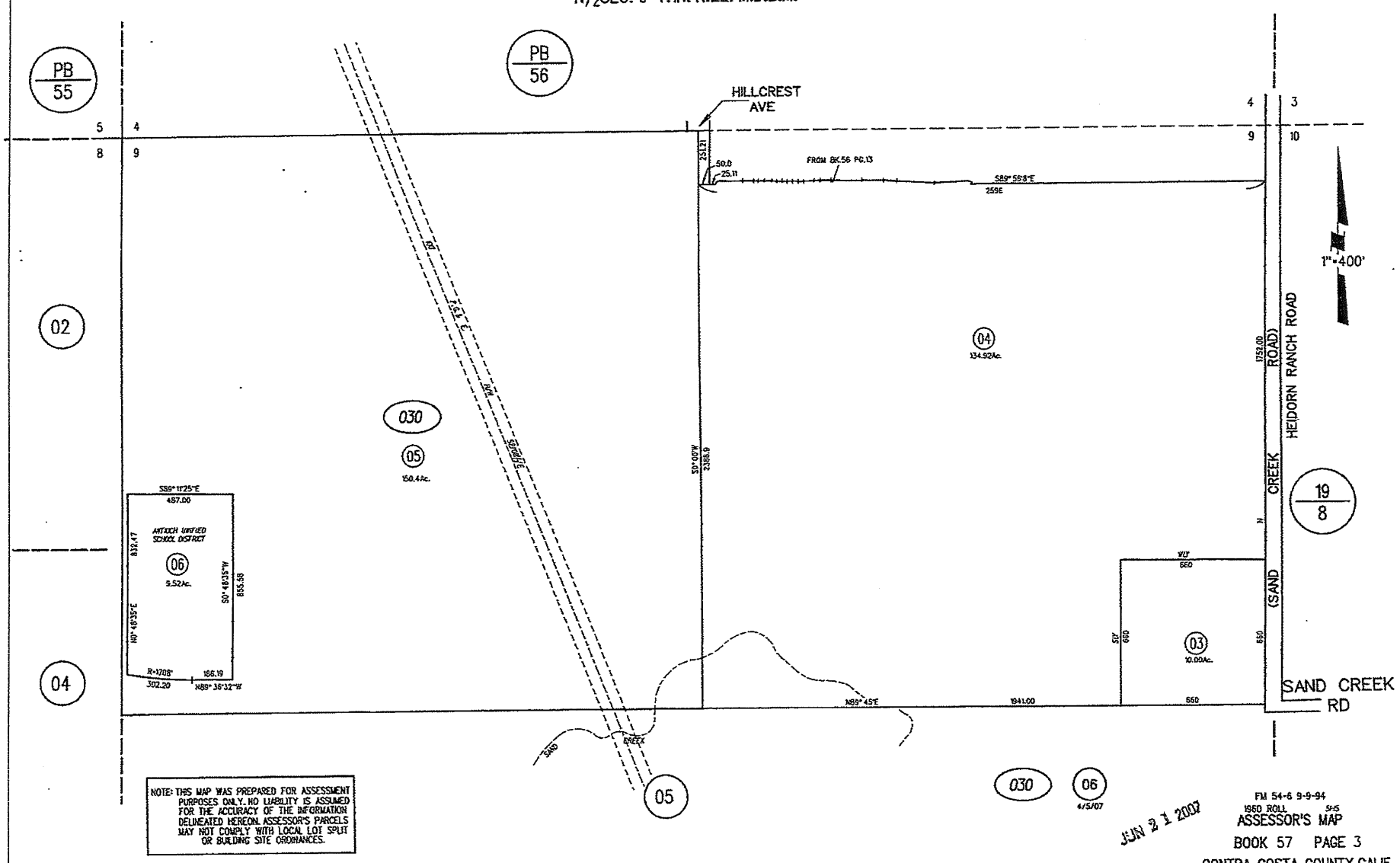
2. THAT PARCEL OF LAND DESCRIBED IN THE DEED TO CONTRA COSTA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT, RECORDED JUNE 2, 1995 AS INSTRUMENT NO. 1995-87820 OF OFFICIAL RECORDS.

3. THAT PARCEL OF LAND DESCRIBED IN THE DEED TO CONTRA COSTA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT, RECORDED APRIL 1, 1996 AS INSTRUMENT NO. 1996-58288 OF OFFICIAL RECORDS.

4. THAT PARCEL OF LAND DESCRIBED IN THE DEED TO ANTIOCH UNIFIED SCHOOL DISTRICT, RECORDED MAY 11, 2006, INSTRUMENT NO. 2006-148904 OF OFFICIAL RECORDS.

APN: 057-050-013-2 (Affects the Land and Other Property) and Old APN: 057-030-001-2 (Affects the Land and Other Property), New APN: 057-030-005 (Not yet Assessed)

Contra Costa, CA , 2007-2008 - 057-03, Sheet: 1

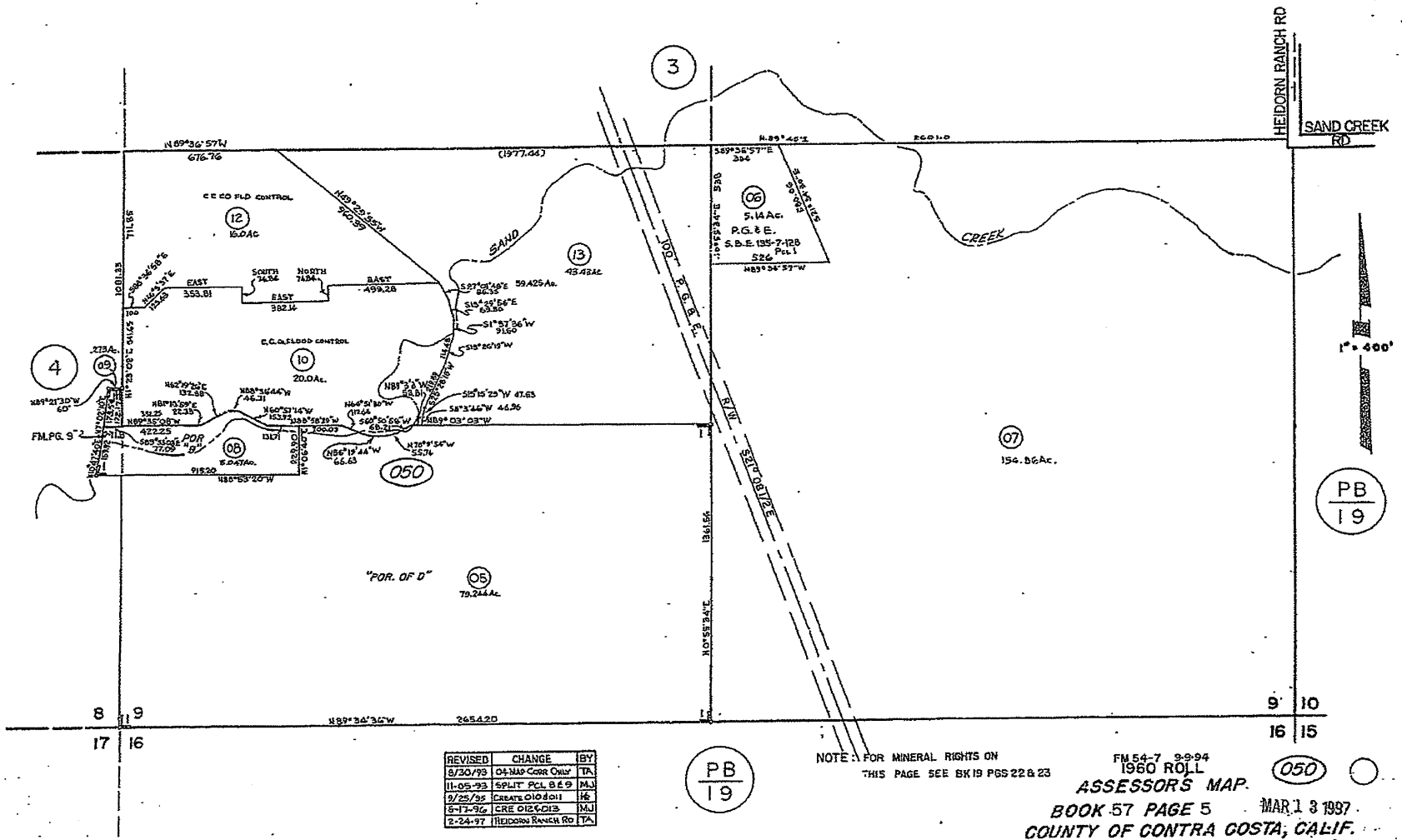


Contra Costa, CA , 2007-2008 - 057-050-007-4, SAND CREEK RD, ANTIOCH CA , Sheet: 1

S ½ SEC. 9 T. 1 N. R. 2 E. M. D. B. M.

1-POR. 116 P.M. 1-3 5-14-85

TAX CODE AREA



REVISED	CHANGE	BY
8/30/93	04 MAP CORR ONLY	TA
11-05-93	SPLIT PCL 8 & 9	MJ
9/25/95	CREATE 010 & 011	HS
5-17-96	CRE 012 & 013	MJ
2-24-97	HEIDORN RANCH RD	TA

NOTE : FOR MINERAL RIGHTS ON THIS PAGE SEE BK 19 PGS 22 & 23

FM 54-7 9-9-94
1960 ROLL

ASSESSORS MAP.

BOOK 57 PAGE 5

COUNTY OF CONTRA COSTA, CALIF.

MAR 13 1997

5J-16

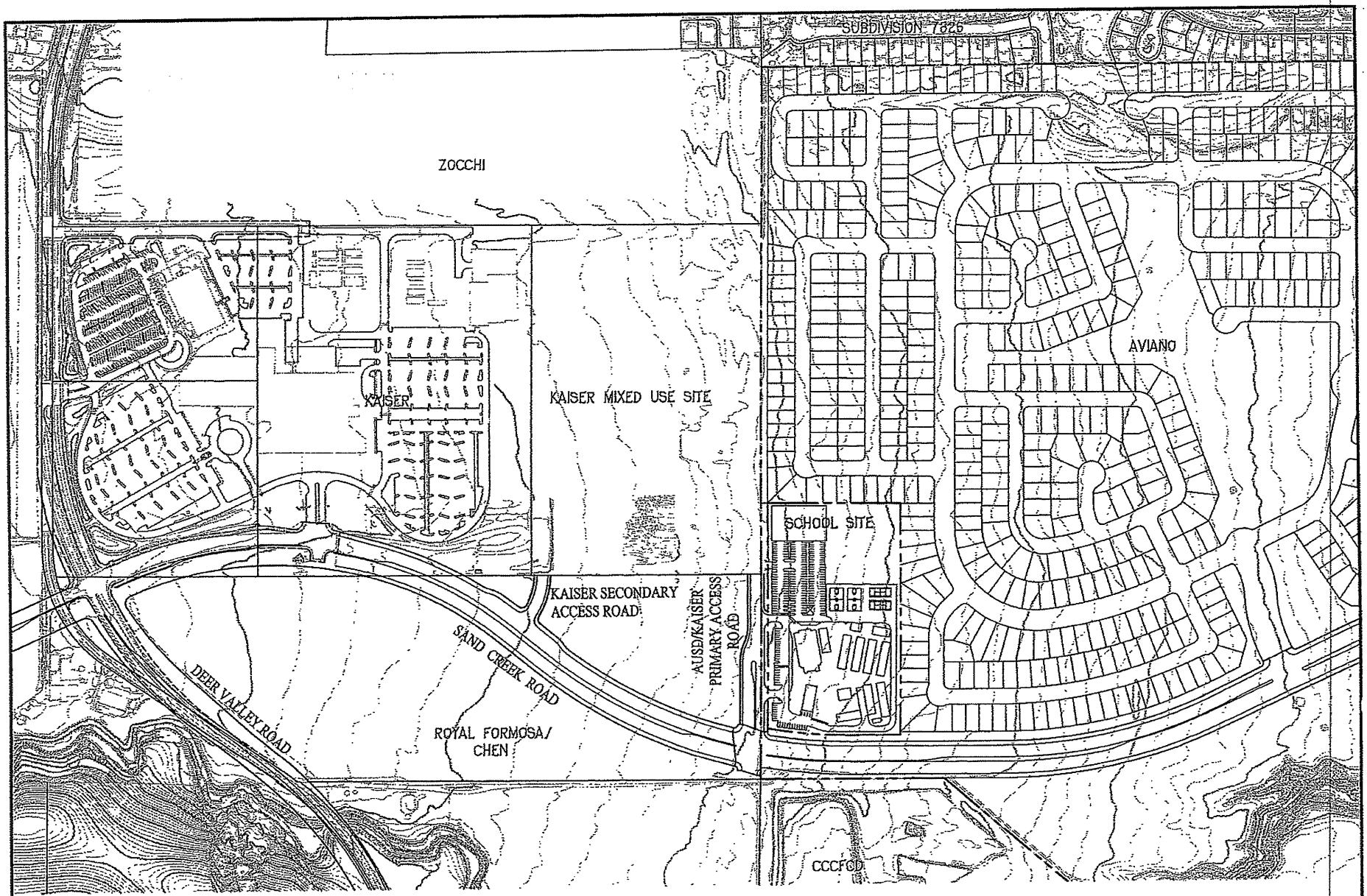


EXHIBIT B

PROPOSED SOUTHERN ALIGNMENT AND ADJACENT PROPERTIES

CITY OF ANTIOCH CONTRA COSTA COUNTY CALIFORNIA

DATE: OCTOBER 4, 2007

SCALE: 1"=500'

cbg
Carlson, Barbee & Gibson, Inc.
CIVIL ENGINEERS • SURVEYORS • PLANNERS
8111 BOLLINGER CANYON ROAD, SUITE 150
SAN RAMON, CALIFORNIA 94583
(925) 866-0322
FAX (925) 866-8575
SAN RAMON • LATHROP

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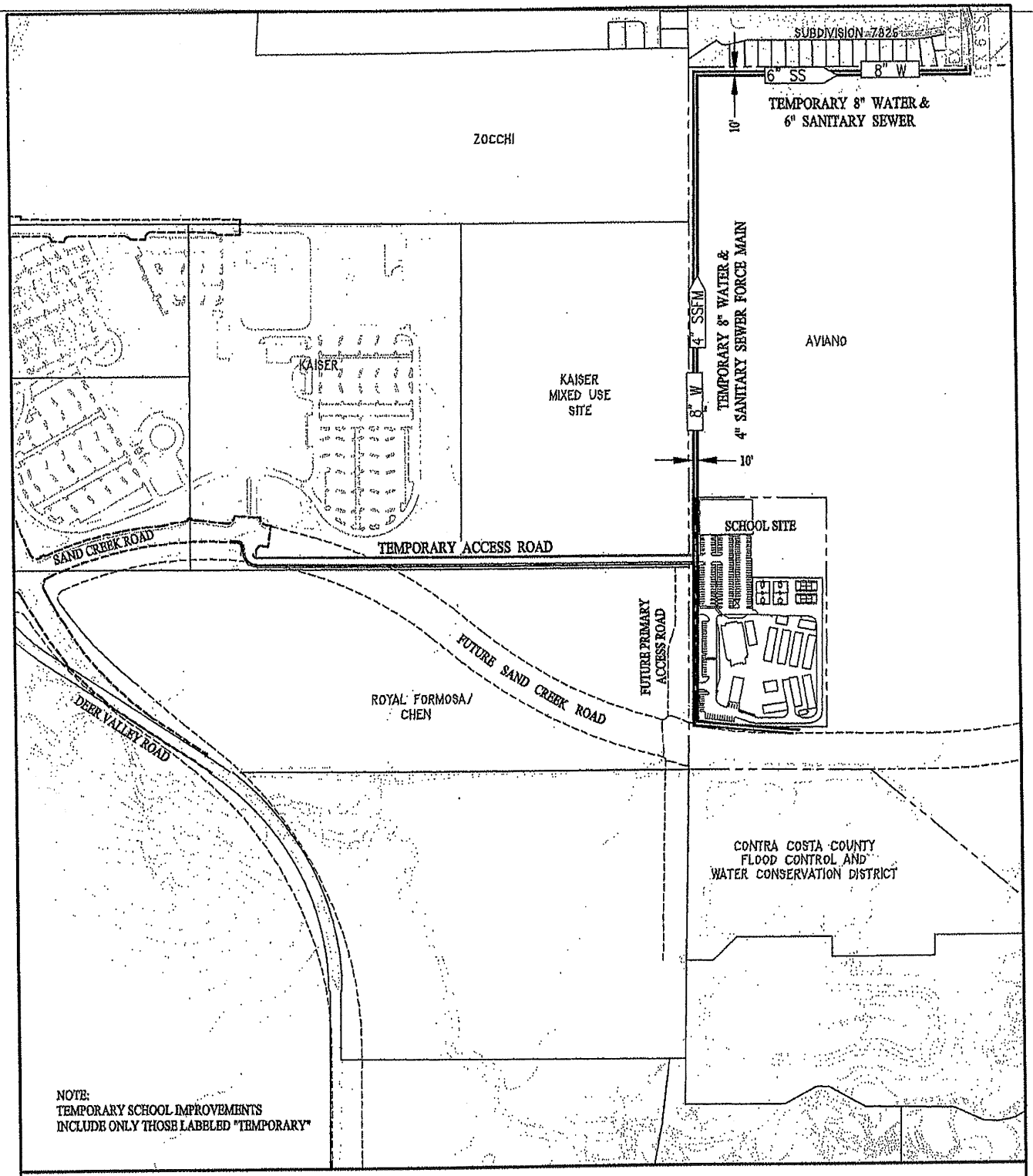


EXHIBIT C-1

PLAN FOR TEMPORARY SCHOOL IMPROVEMENTS

CITY OF ANTIOCH CONTRA COSTA COUNTY CALIFORNIA

DATE: OCTOBER 4, 2007

SCALE: 1"=500'

cbg Carlson, Barbee & Gibson, Inc.
CIVIL ENGINEERS • SURVEYORS • PLANNERS
6111 BOLLINGER CANYON ROAD, SUITE 150
SAN RAMON, CALIFORNIA 94583
(925) 866-0322
FAX (925) 866-8575
SAN RAMON • LATHROP

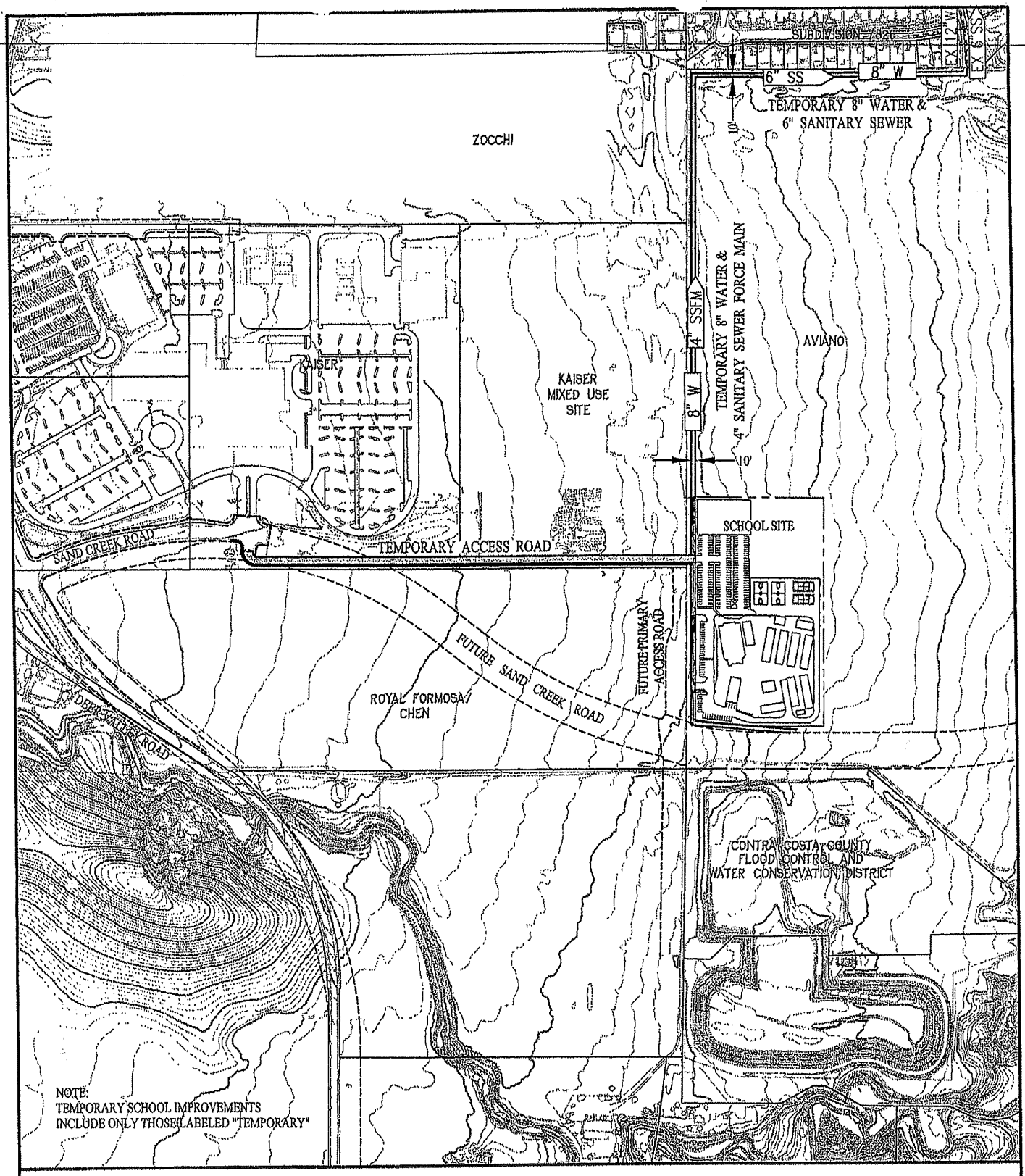


EXHIBIT C-1

PLAN FOR TEMPORARY SCHOOL IMPROVEMENTS

CITY OF ANTIOCH CONTRA COSTA COUNTY CALIFORNIA

DATE: OCTOBER 4, 2007

SCALE: 1"=500'

cbg
Carlson, Barbee & Gibson, Inc.
CIVIL ENGINEERS • SURVEYORS • PLANNERS
5111 BOLLINGER CANYON ROAD, SUITE 150
SAN RAMON, CALIFORNIA 94583
(925) 866-0322
FAX (925) 866-8575
SAN RAMON • LATHROP

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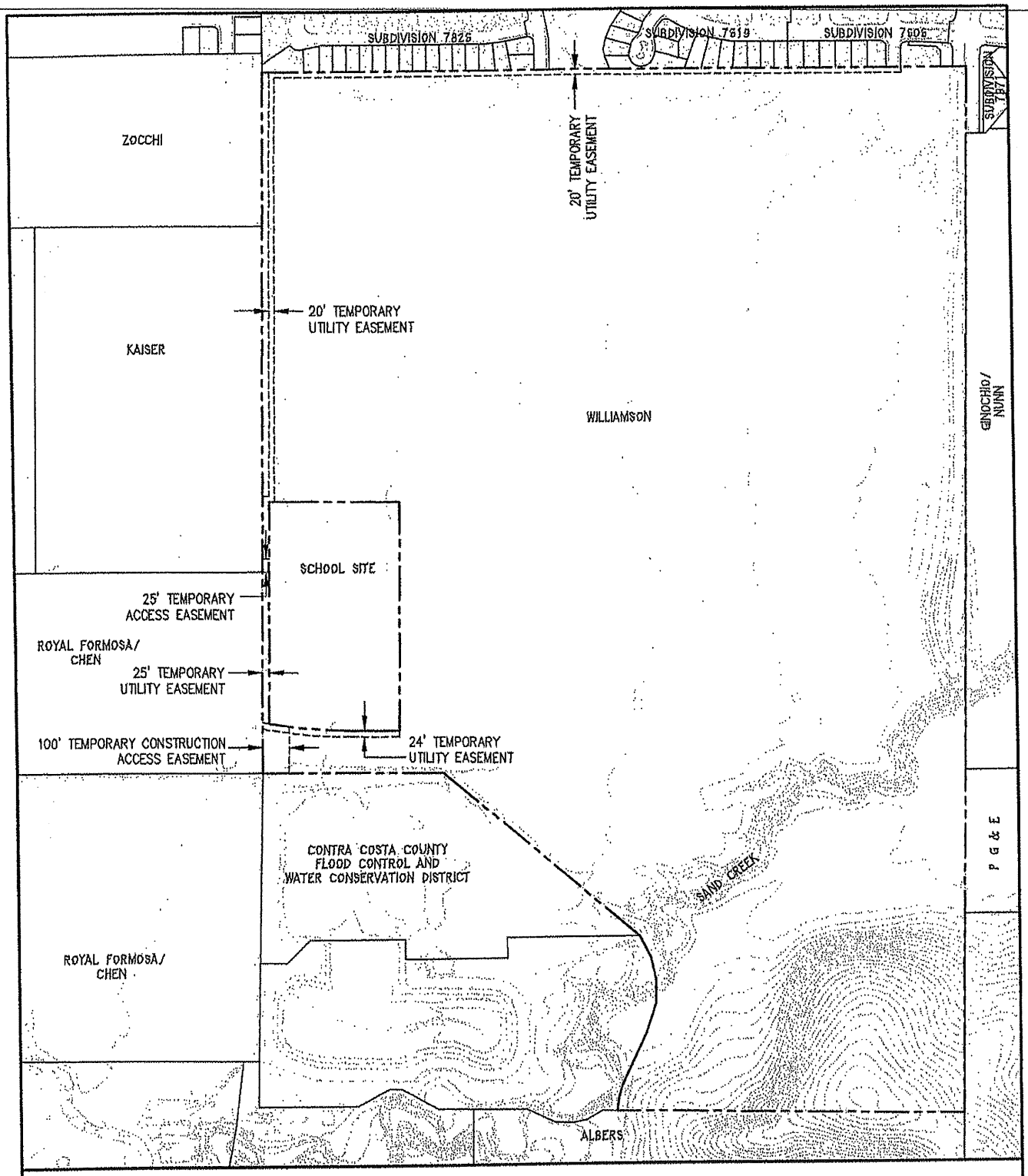


EXHIBIT C-2

TEMPORARY EASEMENT AREA ON DEL WEBB PROPERTY

CITY OF ANTIOCH CONTRA COSTA COUNTY CALIFORNIA

DATE: OCTOBER 4, 2007

SCALE: 1"=500'

cbg Carlson, Barbee & Gibson, Inc.
CIVIL ENGINEERS • SURVEYORS • PLANNERS
6111 BOLLINGER CANYON ROAD, SUITE 150
SAN RAMON, CALIFORNIA 94583
(925) 866-0322
FAX (925) 866-8575
SAN RAMON • LATHROP

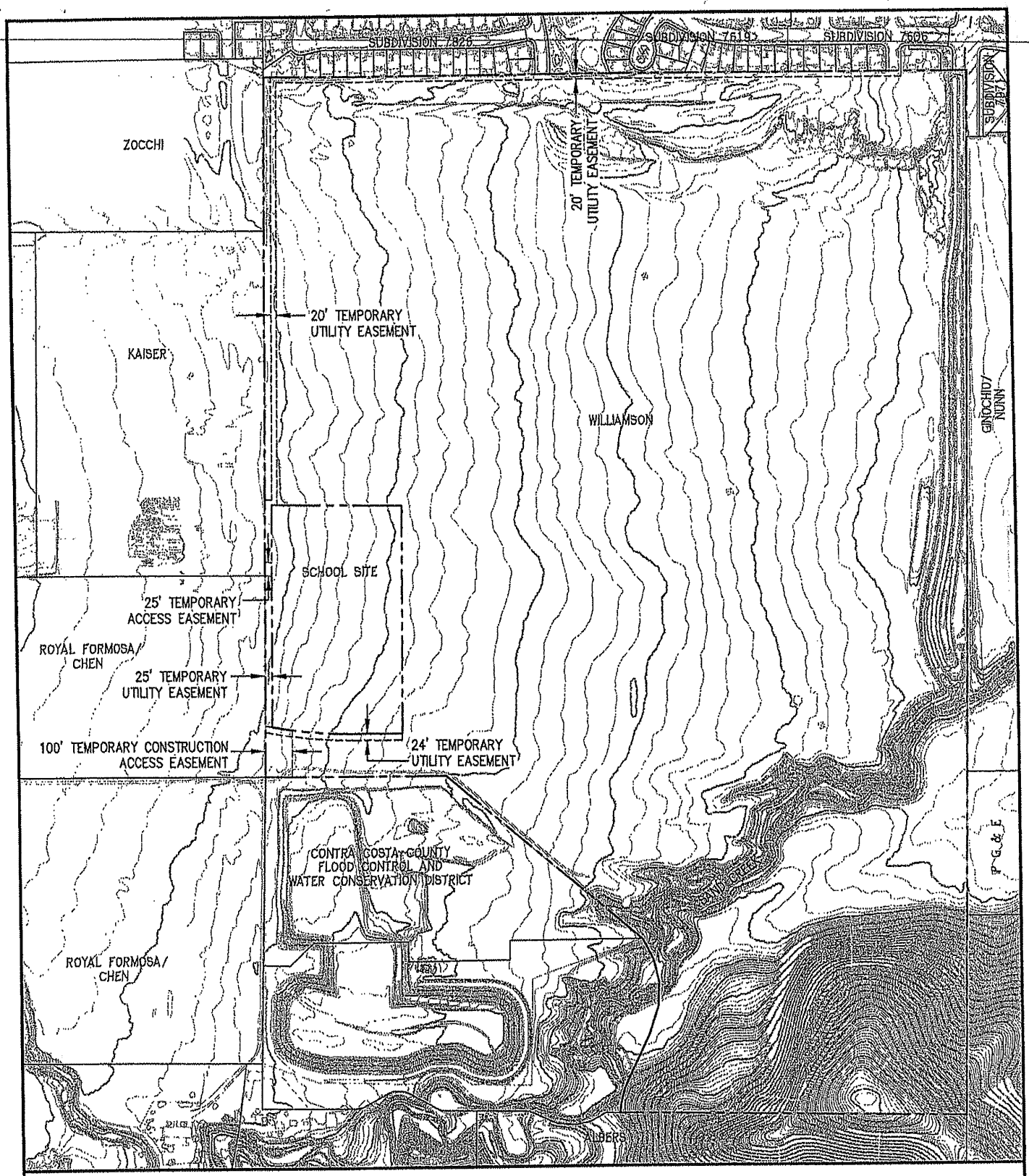


EXHIBIT C-2

TEMPORARY EASEMENT AREA ON DEL WEBB PROPERTY

CITY OF ANTIOCH CONTRA COSTA COUNTY CALIFORNIA

DATE: OCTOBER 4, 2007

SCALE: 1"=500'

Carlson, Barbee & Gibson, Inc.
CIVIL ENGINEERS • SURVEYORS • PLANNERS
6111 BOLLINGER CANYON ROAD, SUITE 150
SAN RAMON, CALIFORNIA 94583
(925) 866-0322
FAX (925) 866-8575
SAN RAMON • LATHROP

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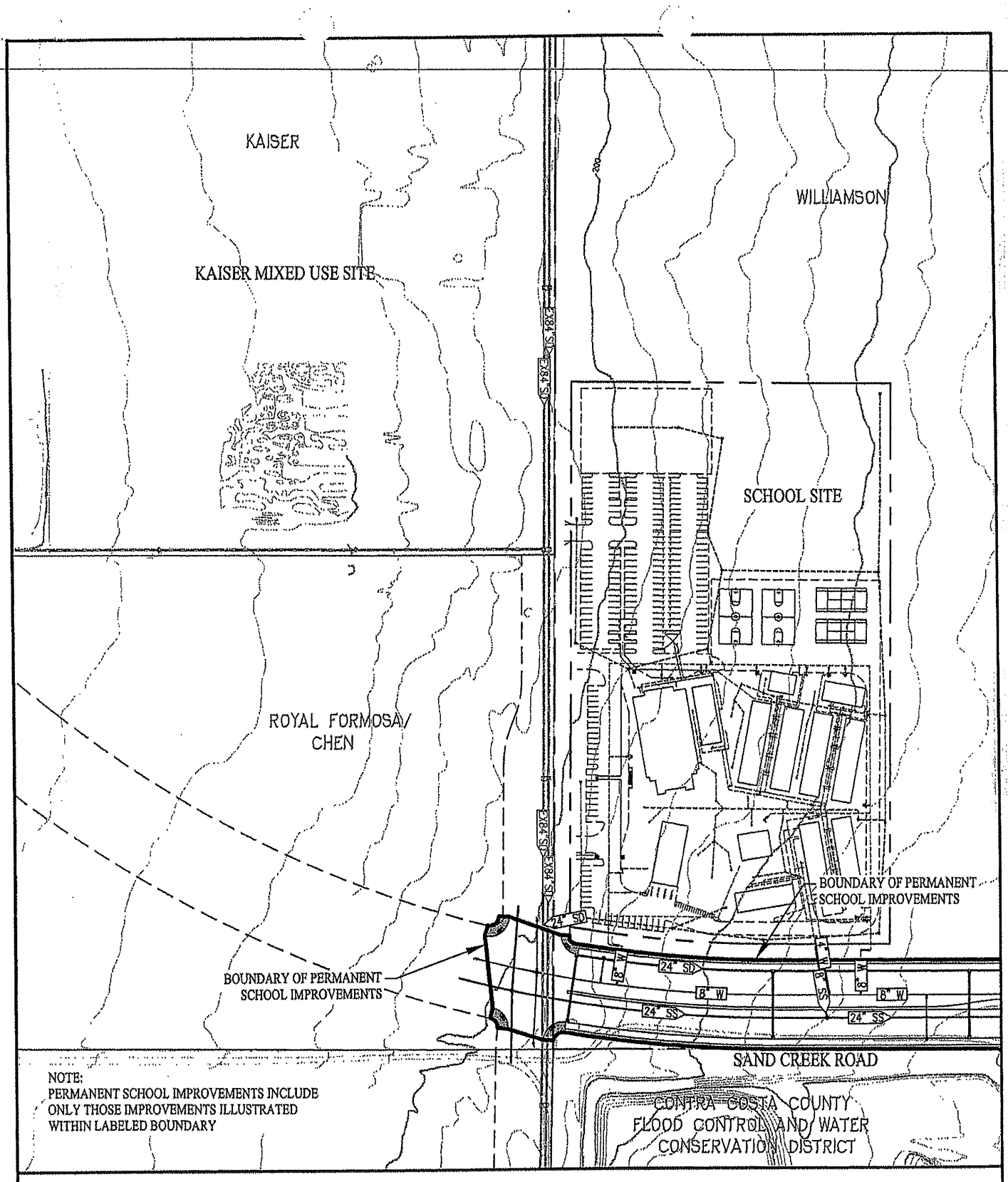


EXHIBIT C-3

PLAN FOR PERMANENT SCHOOL IMPROVEMENTS

CITY OF ANTIOCH CONTRA COSTA COUNTY CALIFORNIA

DATE: OCTOBER 4, 2007

SCALE: 1"=200'

cbg
Carlson, Barbee & Gibson, Inc.
CIVIL ENGINEERS • SURVEYORS • PLANNERS
6111 BOLLINGER CANYON ROAD, SUITE 150
SAN RAMON, CALIFORNIA 94583
(925) 866-0322
FAX (925) 866-8575
SAN RAMON • LATHROP

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Carlson, Barbee & Gibson, Inc.
CIVIL ENGINEERS • SURVEYORS • PLANNERS

EXHIBIT C-4
ESTIMATED COSTS OF DEL WEBB IMPROVEMENTS TO FACILITATE SCHOOL
TEMPORARY SCHOOL IMPROVEMENTS
ANTIOCH, CA

October 5, 2007
Job No.: 514-10

Item	Description	Quantity	Unit	Unit Price	Amount
	ACCESS ROAD (Existing Sand Creek Road to school entrance)				
	Assume: 4' AB shoulder, 30.5' edge of pavement to edge of pavement, 4' AB shoulder				
1	Mobilization	1	LS	$ 5,000.00	$ 5,000.00
2	Clearing and Grubbing	1	LS	$ 5,000.00	$ 5,000.00
3	Earthwork *(stockpile excess 1,200 CY on Williamson Property)*	1,610	CY	$ 5.00	$ 8,050.00
4	Fine Grading	67,100	SF	$ 0.40	$ 26,840.00
5	3" Asphalt Concrete *(30.5' x 1,700')*	51,850	SF	$ 1.20	$ 62,220.00
6	12" Aggregate Base *(38.5' x 1,700')*	65,450	SF	$ 1.80	$ 117,810.00
7	6" AC Berm *(1700')*	1,700	LF	$ 5.00	$ 8,500.00
8	Drainage Swale *(2 x 1,700')*	3,400	LF	$ 5.00	$ 17,000.00
9	8' Chain Link Fence *(1,700')*	1,700	LF	$ 25.00	$ 42,500.00
10	4' Chain Link Fence *(1,700')*	1,700	LF	$ 25.00	$ 42,500.00
11	Traffic Gate	1	EA	$ 5,000.00	$ 5,000.00
12	Traffic Signs	4	EA	$ 250.00	$ 1,000.00
13	Street Signs	2	EA	$ 500.00	$ 1,000.00
14	Speed Tables	6	EA	$ 500.00	$ 3,000.00
15	Striping Budget	1,700	LF	$ 3.00	$ 5,100.00
	Subtotal Access Road				$ 350,520.00
	SANITARY SEWER				
16	4" PVC Force Main	2,810	LF	$ 35.00	$ 98,350.00
17	6" PVC	1,045	LF	$ 35.00	$ 36,575.00
18	Manholes	3	EA	$ 3,500.00	$ 10,500.00
19	Lift Station	1	EA	$ 50,000.00	$ 50,000.00
19	Connect to Existing Sewer	1	EA	$ 2,000.00	$ 2,000.00
	Subtotal Sanitary Sewer				$ 197,425.00
	WATER				
20	8" PVC *(including all appurtenances)*	3,940	LF	$ 35.00	$ 137,900.00
21	Connect to Existing Water	4	EA	$ 2,000.00	$ 8,000.00
	Subtotal Water				$ 145,900.00
	ELECTRICAL				
22	Overhead Power, Telephone & CATV *(3,360')*	15	EA	$ 10,000.00	$ 150,000.00
23	Gas Extension	2,400	LF	Unknown	NIC
	Subtotal Electrical				$ 150,000.00
	SUBTOTAL TEMPORARY SCHOOL IMPROVEMENTS CONSTRUCTION COST				**$ 843,800.00**
	10% CONTINGENCY				**$ 84,400.00**
	TOTAL TEMPORARY SCHOOL IMPROVEMENTS CONSTRUCTION COST				**$ 928,200.00**

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EXHIBIT C-4
ESTIMATED COSTS OF DEL WEBB IMPROVEMENTS TO FACILITATE SCHOOL
PERMANENT SCHOOL IMPROVEMENTS
ANTIOCH, CA

October 5, 2007
Job No.: 514-10

Item	Description	Quantity	Unit	Unit Price	Amount
	SAND CREEK ROAD (Adjacent to school property)				
	Assume: 56' curb to curb, 4' median with landscaping & irrigation, 44' curb to curb, 10' landscape & irrigation, 6' sidewalk (both sides), 24' landscape & irrigation (north side)				
1	Clearing & Grubbing	98,400	SF	$ 0.25	$ 24,600.00
2	Rough Grade Street Section	7,970	CY	$ 5.00	$ 39,850.00
3	Grading to Property Line	98,400	SF	$ 0.40	$ 39,360.00
4	6" Asphalt Concrete	58,400	SF	$ 2.40	$ 140,160.00
5	24" Aggregate Base	58,400	SF	$ 3.60	$ 210,240.00
6	Fog Seal	58,400	SF	$ 0.05	$ 2,920.00
7	Subgrade Fabric	58,400	SF	$ 0.20	$ 11,680.00
8	Type 'C' Median Curb with Cushion	990	LF	$ 20.00	$ 19,800.00
9	Type 'A' Curb & Gutter with Cushion	1,230	LF	$ 20.00	$ 24,600.00
10	Handicap Ramps	4	EA	$ 1,500.00	$ 6,000.00
11	6' Meandering Sidewalk	7,380	SF	$ 4.00	$ 29,520.00
12	Survey Monuments	2	EA	$ 300.00	$ 600.00
13	Traffic Signs	3	EA	$ 250.00	$ 750.00
14	Street Signs	1	EA	$ 500.00	$ 500.00
15	Striping Budget	615	LF	$ 20.00	$ 12,300.00
16	Retaining Wall Budget	615	LF	$ 10.00	$ 6,150.00
	Subtotal Sand Creek Road				$ 569,030.00
	STORM DRAIN				
17	Catch Basins *(small)*	4	EA	$ 3,000.00	$ 12,000.00
18	Manholes	2	EA	$ 5,000.00	$ 10,000.00
19	18" Storm Drain *(crossings)*	205	LF	$ 48.00	$ 9,840.00
20	24" Storm Drain	300	LF	$ 60.00	$ 18,000.00
21	30" Storm Drain	180	LF	$ 75.00	$ 13,500.00
	Subtotal Storm Drain				$ 63,340.00
	SANITARY SEWER				
22	18" VCP *(25' deep)*	200	LF	$ 120.00	$ 24,000.00
23	24" VCP *(25' deep)*	580	LF	$ 150.00	$ 87,000.00
24	Manholes *(25' deep)*	2	EA	$ 10,000.00	$ 20,000.00
25	Lateral for School	2	EA	$ 3,000.00	$ 6,000.00
26	Bore & Jack under Twin 84" Storm Drain	92	LF	$ 600.00	$ 55,200.00
	Subtotal Sanitary Sewer				$ 192,200.00

Item	Description	Quantity	Unit	Unit Price	Amount
	WATER				
27	16" Zone IV Water *(ductile iron with cathodic protection)*	630	LF	$ 120.00	$ 75,600.00
28	Fire Hydrant	1	EA	$ 4,000.00	$ 4,000.00
29	4" School Service *(domestic)*	1	EA	$ 2,000.00	$ 2,000.00
30	8" School Service *(fire)*	2	EA	$ 4,000.00	$ 8,000.00
31	4" Flood Control Service *(domestic)*	1	EA	$ 2,000.00	$ 2,000.00
32	8" Flood Control Service *(fire)*	1	EA	$ 4,000.00	$ 4,000.00
33	Lateral at School Entrance Road *(8" W)*	80	LF	$ 40.00	$ 3,200.00
34	Lateral at Flood Control Entrance Road *(10" W)*	110	LF	$ 50.00	$ 5,500.00
	Subtotal Water				$ 104,300.00
	NON POTABLE WATER				
35	12" Non-Potable Water *(PVC)*	630	LF	$ 60.00	$ 37,800.00
	Subtotal Non Potable Water				$ 37,800.00
	ELECTRICAL				
36	Street Lights *(double arm in median) (every 150')*	4	EA	$ 5,000.00	$ 20,000.00
37	Interconnect & Street Light Trench	615	LF	$ 20.00	$ 12,300.00
38	Joint Trench	615	LF	$ 100.00	$ 61,500.00
	Subtotal Electrical				$ 93,800.00
	MISCELLANEOUS				
39	Median Landscaping & Irrigation	1,845	SF	$ 5.00	$ 9,225.00
40	Parkway Landscaping & Irrigation	11,685	SF	$ 5.00	$ 58,425.00
41	Additional Landscaping & Irrigation	14,760	SF	$ 5.00	$ 73,800.00
42	Relocate Existing Gas Line *(10" Calpine)*	700	LF	$ 500.00	$ 350,000.00
	Subtotal Miscellaneous				$ 491,450.00
	SUBTOTAL PERMANENT SCHOOL IMPROVEMENTS CONSTRUCTION COST				**$ 1,551,920.00**
	10% CONTINGENCY				**$ 155,200.00**
	TOTAL PERMANENT SCHOOL IMPROVEMENTS CONSTRUCTION COST				**$ 1,707,100.00**

Item	Description	Quantity	Unit	Unit Price	Amount
	WATER				
27	8" Water *(Including all appurtenances)*	570	LF	$ 60.00	$ 34,200.00
28	Fire Hydrant	1	EA	$ 3,200.00	$ 3,200.00
29	Irrigation Sleeves	200	LF	$ 5.00	$ 1,000.00
30	Irrigation Lateral	1	EA	$ 1,500.00	$ 1,500.00
31	Irrigation Controller	1	EA	$ 15,000.00	$ 15,000.00
32	Connect to Existing Water	1	EA	$ 2,000.00	$ 2,000.00
	Subtotal Water				$ 56,900.00
	ELECTRICAL				
33	Street Lights *(Every 200')*	3	EA	$ 3,500.00	$ 10,500.00
34	Interconnect & Street Light Trench	570	LF	$ 20.00	$ 11,400.00
35	Joint Trench	570	LF	$ 100.00	$ 57,000.00
36	Traffic Signal *(Not Included in cost estimate)*	1	EA	$ 200,000.00	NIC
	Subtotal Electrical				$ 78,900.00
	MISCELLANEOUS				
37	Right of Way Acquisition from Royal Formosa	36,800	SF	$ -	NIC
	Subtotal Miscellaneous				$ -
	SUBTOTAL PRIMARY ACCESS ROAD CONSTRUCTION COST				**$ 548,250.00**
	15% CONTINGENCY				**$ 82,240.00**
	TOTAL PRIMARY ACCESS ROAD CONSTRUCTION COST *(to the nearest $100)*				**$ 630,500.00**

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EXHIBIT C-4
ENGINEER'S PRELIMINARY CONSTRUCTION COST ESTIMATE
DEL WEBB IMPROVEMENTS TO FACILITATE SCHOOL
ANTIOCH, CA

October 4, 2007
Job No.: 514-10

Item	Description	Quantity	Unit	Unit Price	Amount
	SECONDARY ACCESS ROAD *(180± LF)*				
	Assume: 60' R/W - 40' curb to curb, 5' sidewalk, 5' landscape strip (both sides)				
	STREET WORK				
1	Mobilization	1	LS	$ 5,000.00	$ 5,000.00
2	Clearing and Grubbing	1	LS	$ 5,000.00	$ 5,000.00
3	Rough Grade Street Section	500	CY	$ 5.00	$ 2,500.00
4	Grading to Property Line	10,800	SF	$ 0.50	$ 5,400.00
5	5" Asphalt Concrete	7,300	SF	$ 2.00	$ 14,600.00
6	14" Aggregate Base	7,300	SF	$ 2.10	$ 15,330.00
7	Fog Seal	7,300	SF	$ 0.05	$ 365.00
8	Subgrade Fabric	7,300	SF	$ 0.20	$ 1,460.00
9	Standard Curb & Gutter with Cushion	410	LF	$ 20.00	$ 8,200.00
10	Monuments	1	EA	$ 300.00	$ 300.00
11	5' Sidewalk	1,900	SF	$ 5.00	$ 9,500.00
12	Handicap Ramps	2	EA	$ 1,500.00	$ 3,000.00
13	Traffic Signs	2	EA	$ 250.00	$ 500.00
14	Street Signs	1	EA	$ 500.00	$ 500.00
15	Striping Budget	180	LF	$ 5.00	$ 900.00
16	Parkway Landscaping & Irrigation	1,600	SF	$ 5.00	$ 8,000.00
17	Street Barricade	1	EA	$ 3,000.00	$ 3,000.00
	Subtotal Street Work				$ 83,555.00
	STORM DRAIN				
18	18" Storm Drain	200	LF	$ 45.00	$ 9,000.00
19	Connect to Existing Storm Drain	1	EA	$ 2,000.00	$ 2,000.00
	Subtotal Storm Drain				$ 11,000.00
	SANITARY SEWER				
20	8" VCP Sewer	190	LF	$ 75.00	$ 14,250.00
21	Manhole	1	EA	$ 5,000.00	$ 5,000.00
22	Connect to Existing Sewer	1	EA	$ 2,000.00	$ 2,000.00
	Subtotal Sanitary Sewer				$ 21,250.00

Item	Description	Quantity	Unit		Unit Price		Amount
	WATER						
23	8" Water *(including all appurtenances)*	180	LF	$	60.00	$	10,800.00
24	Connect to Existing Water	1	EA	$	2,000.00	$	2,000.00
	Subtotal Water					$	12,800.00
	MISCELLANEOUS						
25	Right of Way Acquisition from Royal Formosa	10,410	SF	$	-		NIC
	Subtotal Miscellaneous					$	-
	SUBTOTAL SECONDARY ACCESS ROAD CONSTRUCTION COST					$	128,605.00
	15% CONTINGENCY					$	19,290.00
	TOTAL SECONDARY ACCESS ROAD CONSTRUCTION COST ***(to the nearest $100)***					$	147,900.00

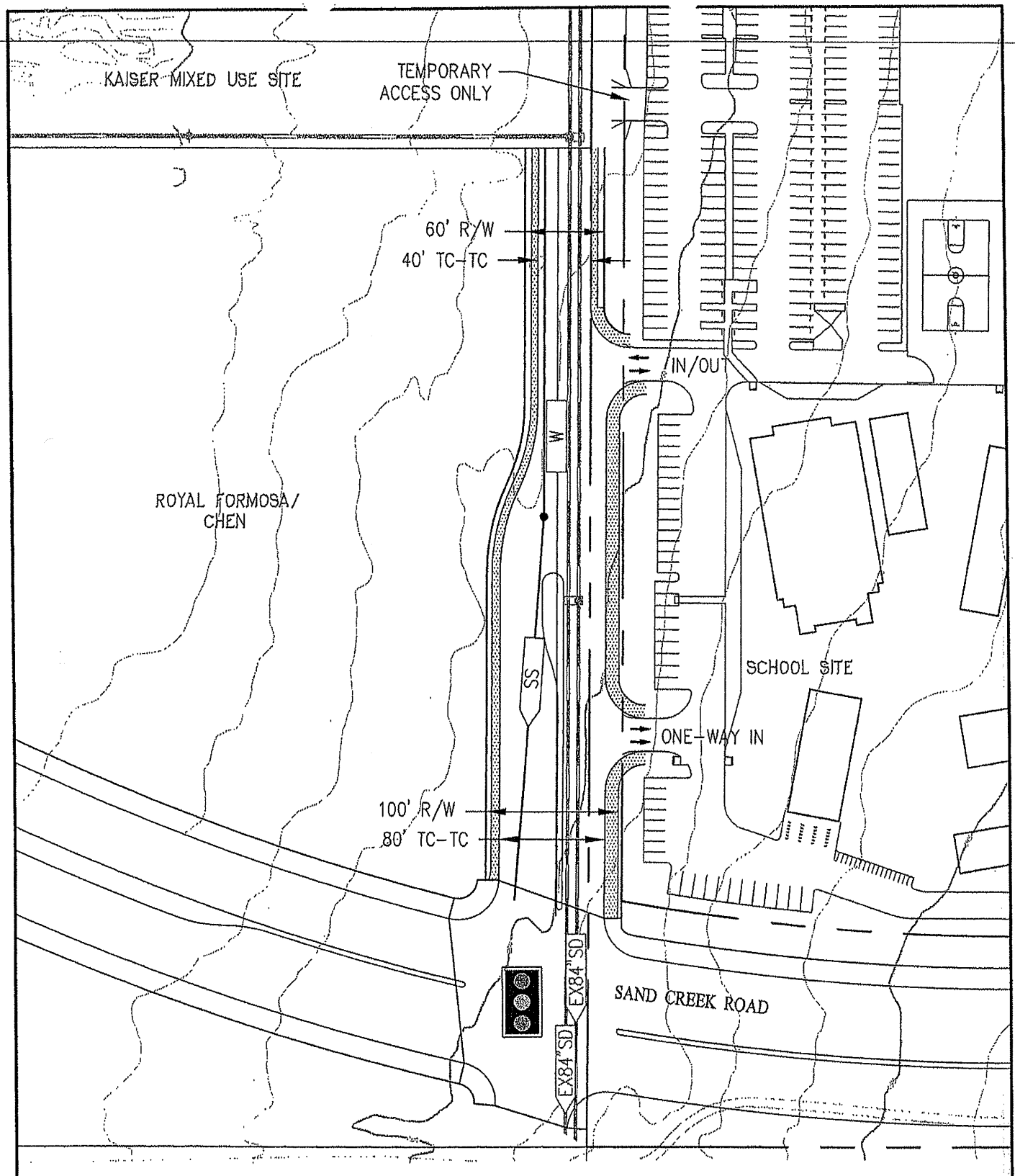


EXHIBIT E
AUSD/KAISER PRIMARY ACCESS ROAD

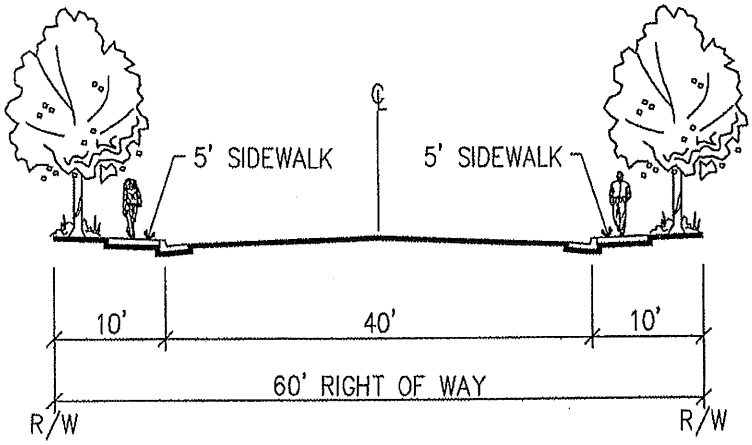
CITY OF ANTIOCH CONTRA COSTA COUNTY CALIFORNIA

DATE: OCTOBER 4, 2007

SCALE: 1"=100'

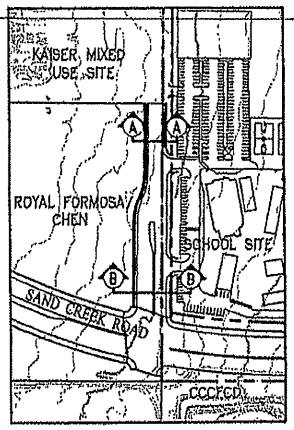
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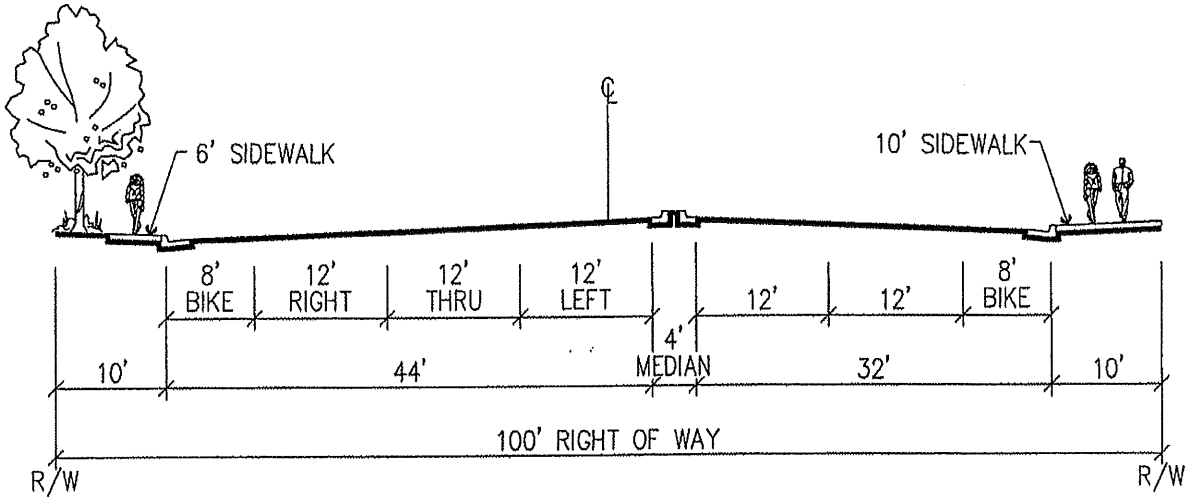
STREET SECTION A-A (60' R/W)

NOT TO SCALE



KEY MAP

NOT TO SCALE



ENTRY SECTION B-B (100' R/W)

NOT TO SCALE

EXHIBIT F
AUSD/KAISER PRIMARY ACCESS ROAD (CROSS-SECTION)

CITY OF ANTIOCH CONTRA COSTA COUNTY CALIFORNIA

DATE: OCTOBER 4, 2007

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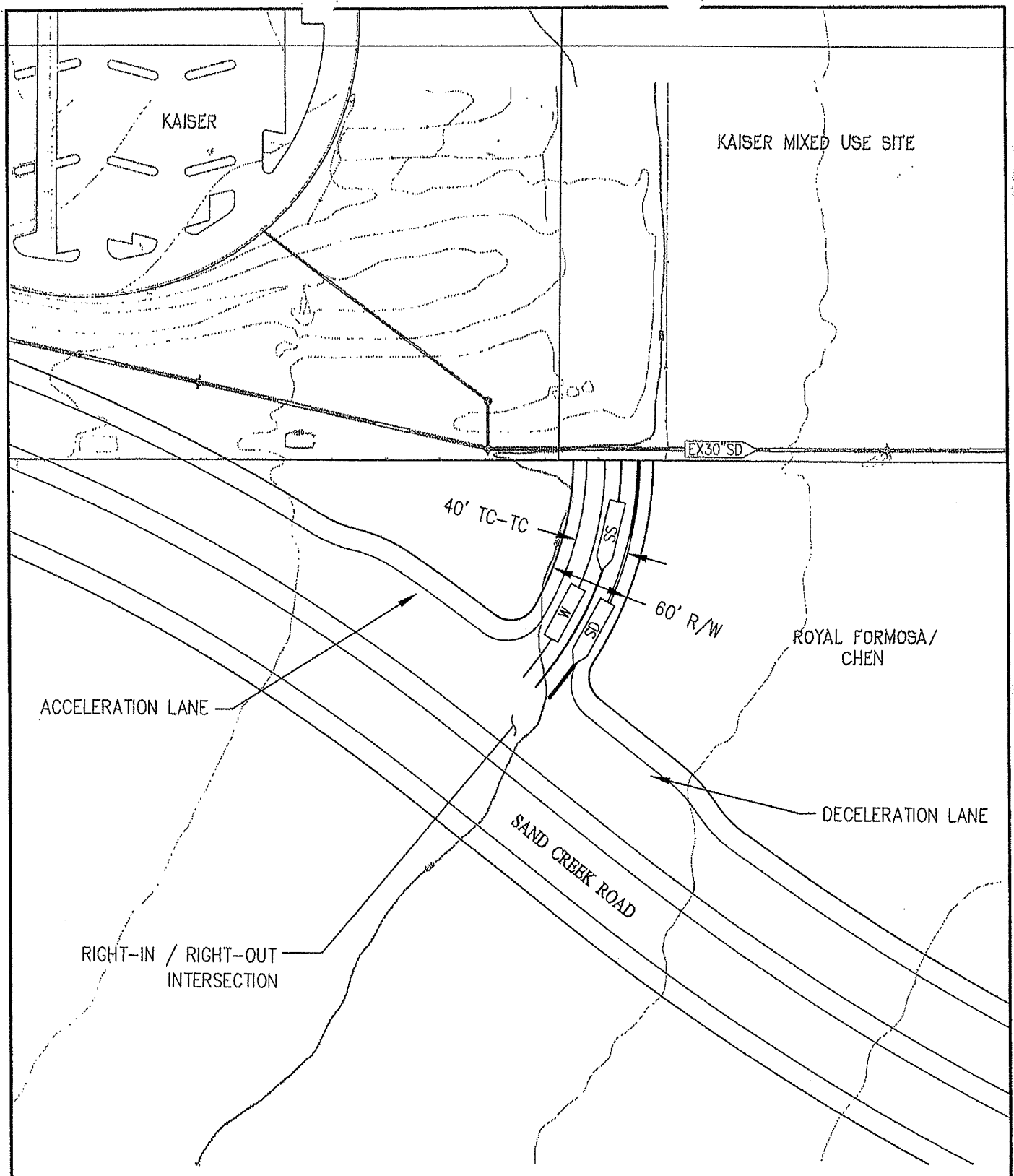


EXHIBIT G
KAISER SECONDARY ACCESS ROAD

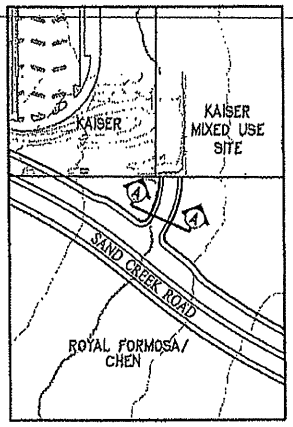
CITY OF ANTIOCH CONTRA COSTA COUNTY CALIFORNIA

DATE: OCTOBER 4, 2007

SCALE: 1"=100'

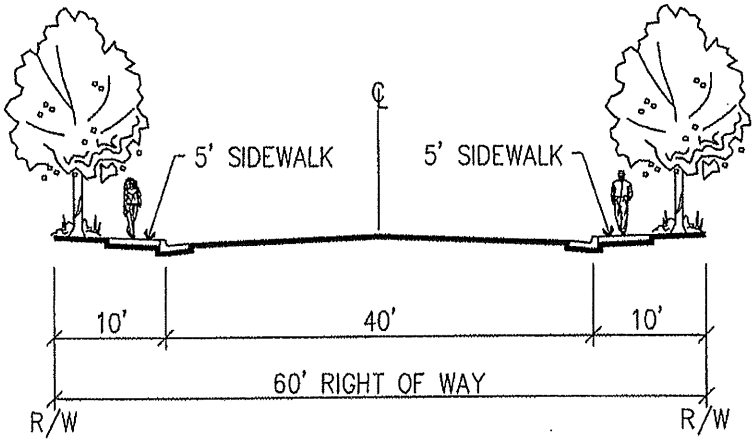
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KEY MAP

NOT TO SCALE



STREET SECTION A-A (60' R/W)

NOT TO SCALE

EXHIBIT H
KAISER SECONDARY ACCESS ROAD
(CROSS-SECTION)

CITY OF ANTIOCH CONTRA COSTA COUNTY CALIFORNIA

DATE: OCTOBER 4, 2007

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EXHIBIT D

[Reserved]

EXHIBIT "I"
FORM OF DECLARATION OF COVENANT

RECORDING REQUESTED BY AND WHEN RECORDED MAIL TO:	SPACE ABOVE THIS LINE FOR RECORDER'S USE

This DECLARATION OF A COVENANT TO RUN WITH THE LAND is executed to be effective upon its recordation ("***Effective Date***"), by Donald Williamson Charitable Trust and Shirley Perry as Trustee of the Shirley Perry Declaration of Living Trust (collectively, "***Covenantor***"), for the benefit of the property described below and of Kaiser Foundation Hospitals, a California nonprofit public benefit corporation ("***Kaiser***"), the City of Antioch, a municipal corporation ("***City***"), and Antioch Unified School District, a political subdivision of the State of California ("***AUSD***").

RECITALS

A. Covenantor is the owner of certain real property situated in an unincorporated area of Contra Costa County consisting of approximately 194.5+/- acres and commonly known as the Williamson Property, as shown and more particularly described in the legal description attached hereto as Exhibit A (the "***Property***").

B. Kaiser is the owner of certain real property located immediately to the west of the Property, to the west of the Magnet School Site and to the east of Deer Valley Road, consisting of approximately 78 acres, [generally] depicted in Exhibit B (the "***Kaiser Property***"). Approximately 18.5 acres of the eastern portion of the Kaiser Property (the "***Mixed Use Site***") are proposed for development with commercial, office, residential, retail and other mixed uses that are compatible with the medical center.

C. The City of Antioch has approved a First Amended & Restated Development Agreement By and Between the City of Antioch and Pulte Home Corporation (dba Del Webb) ("***Del Webb***") ("***Restated Development Agreement***") contemplating development of the Property with an active adult community proposed to consist of no greater than 535 residential units (the "***Del Webb Project***"), facilitate construction of the Dozier Libbey Medical High School ("***Magnet School***") on an adjacent site consisting of approximately 10 acres and depicted on Exhibit B ("***Magnet School Site***"), and construct roadway and other infrastructure necessary for the Del Webb Project and the Magnet School. To the extent capitalized terms used in this

Declaration of Covenant are not defined herein, they are subject to the definitions set forth in the Restated Development Agreement.

E. Pursuant to a Memorandum of Agreement Resolving Alignment of Sand Creek Road Through City of Antioch's Sand Creek Focus Area dated _____ (***"Five Party Agreement"***), Coventantor, City, Del Webb, Antioch Unified School District, and Kaiser have agreed upon the terms and conditions relating to the proposed Southern Alignment of Sand Creek Road through the Property consistent with Exhibit B (***"Southern Alignment"***).

NOW THEREFORE, for good and valuable consideration described in the Restated Development Agreement and the Five Party Agreement, Covenantor hereby covenants that:

1. PURPOSE

It is the purpose of this covenant to ensure that any future developer of the Property who proceeds with a development plan that requires implementation of the Southern Alignment of Sand Creek Road (or any other alignment that has Sand Creek Road located south of the Magnet School) will: (i) construct or, alternatively, reimburse for construction of, a primary access road along the western edge of the Magnet School site between Sand Creek Road and the southern edge of the Kaiser Mixed Use Site as illustrated in plan view and with a cross section in Exhibit E and Exhibit F (***"Primary Access Road"***); (ii) compensate Kaiser for the anticipated costs associated with construction of a secondary access road for its Mixed Use Site as illustrated in plan view and with a cross section in Exhibit G and Exhibit H (***"Secondary Access Road"***); (iii) compensate Kaiser for the potential diminution in value Kaiser asserts would result from the Southern Alignment; and (iv) facilitate the provision of certain infrastructure to serve AUSD's Magnet School.

2. PROPERTY OWNER COVENANTS

Property Owner hereby covenants that, upon any future developer developing the Property pursuant to a land plan that results in the Southern Alignment or other alignment of Sand Creek Road to the south of the Dozier Libbey Medical High School Site, such future developer of the Property shall be required to do the following until December 8, 2024, regardless of the termination of the Restated Development Agreement:

(a) Either: (a) at the time of construction, and prior to acceptance by the City, of any portion of Sand Creek Road along the Southern Alignment, construct the Primary Access Road at its own expense (including planning engineering, condemnation, and construction); or (b) in the event the Primary Access Road has been constructed at Kaiser's expense prior to development by such future developer of the Property, make a payment to Kaiser in the amount of the actual documented cost of construction of said road up to but not to exceed $660,000 plus the actual costs of condemnation incurred by Kaiser related to the Primary Access Road. Such payment shall be made within 36 months following recordation of the first final subdivision map for the future developer's project. The location, layout, and specifications for the Primary Access Road are generally illustrated in plan view and with a cross section in Exhibit E and Exhibit F to this Agreement.

(b) Either: (a) at the time of construction, and prior to acceptance by the City, of any portion of Sand Creek Road along the Southern Alignment, construct the Secondary Access Road at its own expense (including planning engineering, condemnation, and construction); or (b) make a payment to Kaiser in the amount of $180,000. The location, layout and specifications for the Secondary Access Road are generally illustrated in plan view and with a cross section in Exhibit G and Exhibit H to this Agreement. The payment pursuant to this subsection shall be made to Kaiser within thirty-six (36) months following recordation of the first final subdivision map for the future developer's project. Kaiser shall not preclude such future developer from opting to develop the Secondary Access Road itself even assuming either that the Mixed Use Site has not yet been developed or Sand Creek Road has not yet been developed.

(c) Make a payment to Kaiser in the amount of $910,000 to compensate Kaiser for any potential diminution in value that Kaiser asserts would result from the Southern Alignment of Sand Creek Road. Such amount shall be payable to Kaiser within thirty-six (36) months following recordation of the first final subdivision map for the future developer's project.

(d) Reimburse AUSD for all costs associated with design, planning and construction of the Temporary School Improvements (including but not limited to financing costs) and either build the Permanent School Improvements or reimburse AUSD for all costs associated with construction of the Permanent School Improvements (including but not limited to financing costs). Any reimbursement to AUSD shall occur in full within 18 months of the recordation of the first final map for the project by the future developer. The financial obligation of any future developer of the Property relating to Temporary School Improvements pursuant to this Section 4.9(d) shall not exceed $1,000,000, shall not be subject to the adjustment pursant to Section 4.9(e), and shall be supported through documentation showing the amounts actually paid by AUSD for construction of such improvements. AUSD shall provide full documentation of the costs incurred by it for construction of Temporary School Improvements at the time it makes any request for reimbursement pursuant to this Section.

(e) Any payments made by a future developer of the Property as described in this section shall be subject to adjustment of 2% simple interest (not compounded) one year following the approval of any discretionary entitlement for a future development for a site plan that results in the Southern Alignment or any other alignment to the south of the Dozier Libbey Medical High School and 2% simple interest per year prorated on a monthly basis (not compounded) thereafter until the date of payment.

(f) This Declaration of Covenant shall be recorded by the escrow agent concurrent with the Restated Development Agreement. This Declaration of Covenant shall run with the land so its burdens and benefits are binding on all successive owners of interests in the Property until December 8, 2024 which corresponds with the expiration of that certain Development Agreement between Kaiser and the City dated November 8, 1994. This Declaration of Covenant may not be rescinded without the written consent of Kaiser, the City, and AUSD.

IN WITNESS WHEREOF, Covenantor has executed this declaration as of the Effective Date:

COVENANTORS: **Donald Williamson Charitable Trust**

By: _____

Its: _____

Shirley Perry, as Trustee of the Shirley Perry Declaration of Living Trust

By: _____

Its: _____

H:\Community Development\Magnet School-Kaiser-Pulte\Pulte DA\Pulte_Sand Creek Declaration of Covenant (Proposed Final_ 10_9_07) (5).DOC

End of Document

APPENDIX C

TRANSPORTATION AND CIRCULATION IMPACT STUDY

Transportation and
Circulation Impact Study

AVIANO ADULT COMMUNITY EIR ANTIOCH, CA

21 November 2008

Prepared for:

City of Antioch, CA
LSA Associates, Inc.

Prepared by:

Kimley-Horn and Associates, Inc.

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INTRODUCTION

The Aviano Adult Community is proposed to be located along Sand Creek Road west of Hillcrest Avenue and is near housing, Kaiser Hospital, and a future Magnet High School.

The project site is currently vacant land. Completion of the project is estimated to occur by 2011.

This study is intended to evaluate the current and future transportation, circulation, and parking conditions at or near the project site and to identify key intersections where traffic operations may be significantly impacted as a result of the proposed project.

This study comprises Section B - Transportation, Circulation, and Parking elements of the Aviano Adult Community Environmental Impact Report (EIR).

B. TRANSPORTATION AND CIRCULATION

This section describes the existing transportation and circulation conditions around the project site. This section also addresses the potential impacts of the proposed Aviano Adult Community project in terms of intersection level of service as well as trip generation, traffic distribution, traffic assignment, and potential intersection and roadway improvements to mitigate expected future deficiencies.

The project's potential effect on transit services, pedestrian, and bicycle facilities in the project area are also evaluated. Measures that would mitigate these impacts to a less-than-significant level are recommended where feasible.

1. Setting

The following setting section describes the existing transportation system around the project site.

a. Study Area

Figure IV.C-1 shows the location of the proposed project and adjacent street network. The proposed project will generate new vehicular trips that will increase traffic volumes on the nearby street network. To assess changes in traffic conditions associated with the project, the following 22 intersections, illustrated in **Figure IV.B-1**, were evaluated in this traffic study:

1. Deer Valley Road/Lone Tree Way
2. Deer Valley Road/Marita Drive
3. Deer Valley Road/Prewett Ranch Drive
4. Deer Valley Road/Wellness Way
5. Deer Valley Road/Kaiser Way
6. Deer Valley Road/Sand Creek Road
7. Kaiser Hospital Entrance/Sand Creek Road
8. High School Access Road/Sand Creek Road
9. Project South Access/Sand Creek Road
10. Hillcrest Avenue/Sand Creek Road
11. Hillcrest Avenue/Project East Access
12. Hillcrest Avenue/Prewett Ranch Drive
13. Hillcrest Avenue/Vista Grande Drive
14. Hillcrest Avenue/Lone Tree Way
15. Vista Grande Drive/Lone Tree Way
16. Heidorn Ranch Road/Lone Tree Way
17. Canada Valley Road/Lone Tree Way
18. Southbound SR-4 Bypass/Lone Tree Way
19. Northbound SR-4 Bypass (Jeffrey Way)/Lone Tree Way
20. Heidorn Ranch Road/Sand Creek Road
21. SR-4 Bypass/Sand Creek Road
    (SR-4 Bypass SB Ramps/Sand Creek Road – future)
22. SR-4 Bypass NB Ramps/Sand Creek Road (future)
23. Deer Valley Road/Mammoth Way

Intersections were selected based on anticipated project traffic distribution, at the direction of City staff, and consistent with Contra Costa Transportation Authority Technical Procedures 1997.

b. Street Network

(1) Regional Roadways. The project study area is served by one regional roadway as described below.

State Route 4 (SR-4) Bypass is planned to be a new roadway between Vasco Road in Brentwood and the existing SR-4 in Antioch. Currently a two-lane expressway is completed between Lone Tree Way and Balfour Road, with construction completed on a of a four-lane freeway between Lone Tree Way and SR-4 to the north. Ultimately this section will be widened to six lanes. At-grade intersections will be replaced with a freeway interchange at Sand Creek Road, as well as at other locations outside of the study area. An interchange currently exists at Lone Tree Way but will be modified with the future widening.

(2) Local Roadways. A description of local roadways that serve the project study area is provided below.

Canada Valley Road is a two-lane collector roadway with turn lanes serving residential areas north of Lone Tree Way. The speed limit is 25 mph. South of Lone Tree Way the street changes name and serves the Arcadia Shopping Center which includes the Home Depot store.

Deer Valley Road is a four-lane arterial with turn lanes. Near Kaiser Hospital and south of Sand Creek Road, Deer Valley Road is currently a two-lane roadway. The speed limit on Deer Valley Road is 45 mph. Shoulders are designated as Class II bike lanes. Deer Valley Road is designated as a Route of Regional Significance.

Heidorn Ranch Road is a four-lane arterial with turn lanes. The speed limit on Heidorn Ranch Road is 25 mph. The roadway serves residential and commercial uses and is planned to be extended to the south to connect with Sand Creek Road.

Hillcrest Avenue is a four-lane divided roadway with a landscaped median, left turn bays, wide shoulders, and restricted parking. Shoulders are designated as Class II bike lanes. The speed limit on Hillcrest Avenue is posted at 45 mph in the study area. As part of the Aviano project, Hillcrest Avenue will be extended to the south to connect with Sand Creek Road and extended farther to the south in the future. Hillcrest Avenue is designated as a Route of Regional Significance.

Jeffery Way is a two-lane street with a speed limit of 25 mph. Jeffrey Way is connected to the northbound ramps for the SR-4 Bypass that was completed in 2007. Existing conditions were analyzed in 2006 before the bypass was completed.

Lone Tree Way is an arterial roadway that that joins Antioch with the City of Brentwood. Through the project study area, Lone Tree Way is a four- to six-lane divided roadway

with a landscaped median, left turn bays, wide shoulders, and restricted parking. Shoulders are designated as Class II bike lanes. The speed limit on Lone Tree Way is posted at 45 mph in the study area. Lone Tree Way is designated as a Route of Regional Significance. Deer Valley High School is located on Lone Tree Way east of Deer Valley Road. Traffic from the high school represents a large portion of traffic during the AM peak period.

Mammoth Way is a two-lane collector roadway with turn lanes providing access to and from Deer Valley Road from the residential neighborhoods west of Deer Valley Road.

Marita Drive is a two-lane residential street with Class II bike lanes. The posted speed limit is 25 mph.

Prewett Ranch Drive is a two-lane collector street with turn lanes at major intersections. The posted speed limit on Prewett Ranch Drive is 35 mph near Deer Valley Road and 25 mph near Hillcrest Avenue. There are Class II bike lanes present east of Deer Valley Road. Diablo Vista Elementary School is located on Prewett Ranch Drive east of Deer Valley Road. Traffic from the elementary school represents a large part of traffic during the AM peak period.

The High School Access Road (HSAR) will be built by Aviano and will extend along the western edge of the Magnet School and extend from Sand Creek Road to the northern boundary of the Magnet School property. The road will serve the Magnet School. A temporary road is currently under construction from the eastern terminus of Sand Creek Road (near Deer Valley Road) east to intersect the HSAR and will temporarily provide access to the school until Sand Creek Road is constructed from Hillcrest Avenue west to the HSAR by the Aviano developer. Once this segment of Sand Creek Road is built the temporary access road on Sand Creek Road east from Deer Valley Road will be closed.

Sand Creek Road is a planned six-lane arterial with turn lanes at major intersections. The roadway is designated as a Route of Regional Significance. In the near-term, Sand Creek Road will be extended from the SR-4 Bypass to Heidorn Ranch Road as well as from Hillcrest Avenue west to the western edge of the Antioch Magnet School. In the long-term, Sand Creel Creek road will connect from Dallas Ranch Road in Antioch to Sand Creek Road in Brentwood. The posted speed limit on Sand Creek Road will be 45 mph.

Vista Grande Drive is a two-lane street with turn lanes at major intersections. The speed limit on Vista Grande is 25 mph. There are Class II bike lanes present on the roadway.

Wellness Way is a two-lane street with turn lanes providing access to Kaiser Hospital and medical offices from Deer Valley Road.

c. Existing Transit Services

Areas near the project site are served by transit Routes 380, 383, 384, 385, 388, and 392 of the Tri-Delta Transit System. The closest stop to the project site is on Route 388 which stops at the Kaiser Medical Center just west of the proposed Aviano Adult Community.

Route 380 travels along Lone Tree Way and on Canada Valley Road. Route 383 travels along Lone Tree Way and Deer Valley Road north of Lone Tree Way. Route 384 travels along Deer Valley Road. Route 385 travels along Hillcrest Avenue and on Lone Tree Way east of Hillcrest Avenue. Route 388 travels along Dallas Ranch Road to Prewett Ranch Road and then south on Deer Valley Road to the Kaiser Medical Center. Route 392 travels along Lone Tree Way and on Hillcrest Avenue.

d. Existing Pedestrian and Bicycle Facilities

An inventory of pedestrian facilities at the project study intersections indicates that there are continuous sidewalk facilities at all existing project study intersections and it is assumed that sidewalk facilities will be included when Sand Creek Road is extended from Deer Valley Road to the SR-4 Bypass/Sand Creek Road interchange.

In the vicinity of the project site, Class II bicycle facilities (i.e. striped bike lanes) are present on Canada Valley Road, Deer Valley Road, Prewett Ranch Drive, Marita Drive, and Hillcrest Avenue. Sand Creek Road and Heidorn Ranch Road are proposed to be Class II bicycle facilities in the future. The Mokelumne Trail (a Class I facility) runs parallel to Lone Tree Way. No other street segments at study intersections were observed to have bikeway facilities.

e. Existing Level of Service Conditions

Operating conditions experienced by drivers are described in terms of Level of Service (LOS), which is a qualitative measure of factors such as delay, speed, travel time, freedom to maneuver, and driving comfort and convenience. Levels of service are represented by a letter scale from LOS A to LOS F, with LOS A representing the best performance and LOS F representing the poorest performance.

Traffic conditions in the study area are assessed through the evaluation of peak hour Levels of Services (LOS) at critical intersections.

Table IV.B-1 relates the operational characteristics associated with each level of service category for both signalized and unsignalized intersections.

Table IV.B-1: Intersection Level of Service Definitions

Level of Service	Description	Signalized (Intersection volume to capacity ratio v/c)	Unsignalized (Avg. control delay per vehicle sec/veh.)
A	Free flow with no delays. Users are virtually unaffected by others in the traffic stream	[0.6	[10
B	Stable traffic. Traffic flows smoothly with few delays.	0.61 – 0.70	∃ 10 – 15
C	Stable flow but the operation of individual users becomes affected by other vehicles. Modest delays.	0.71 – 0.80	∃ 15 – 25
D	Approaching unstable flow. Operation of individual users becomes significantly affected by other vehicles. Delays may be more than one cycle during peak hours.	0.81 – 0.90	∃ 25 – 35
E	Unstable flow with operating conditions at or near the capacity level. Long delays and vehicle queuing.	0.91 – 1.00	∃ 35 – 50
F	Forced or breakdown flow that causes reduced capacity. Stop and go traffic conditions. Excessive long delays and vehicle queuing.	∃ 1.00	∃ 50

Sources: Contra Costa Transportation Authority Technical Procedures 1997 and Transportation Research Board, *Highway Capacity Manual 2000*, National Research Council, 2000.

All project study intersections were analyzed under weekday AM and weekday PM peak hour traffic conditions. Peak weekday conditions occur from 7:00 AM to 9:00 AM and from 4:00 PM to 6:00 PM. Intersection operations were evaluated for the one hour during each of these periods for which the highest traffic volumes were measured. Weekday traffic counts were collected in May and October 2006 as well as May 2007. Peak-hour traffic volumes at the study intersections are shown on **Figure IV.B-3**. Intersection turning movement counts are contained in the **Technical Appendix**.

The existing lane configurations, traffic control devices, signal phasing, and turn pocket lengths at the study intersections were obtained during field visits conducted in October 2006. The existing lane geometry and traffic control at the study intersections are illustrated in **Figure IV.B-2**.

Results of the existing conditions analysis are presented in **Table IV.B-2**, along with the jurisdictional standard for acceptable levels of service. Additional detail of the analysis is provided in the **Technical Appendix**. Results of the analysis indicate that all of the study area intersections currently operate at acceptable levels of service based on established significance criteria.

Table IV.B-2: Existing Levels of Service

	Intersection	Criteria	AM Peak		PM Peak	
			LOS	V/C or Delay	LOS	V/C or Delay
1	Lone Tree Way / Deer Valley Road	D	B	0.68	B	0.67
2	Deer Valley Road / Marita Drive	D	A	0.33	A	0.27
3	Deer Valley Road / Prewett Ranch Drive	D	A	0.48	A	0.37
4	Deer Valley Road / Wellness Way	D	A	0.34	A	0.26
5	Deer Valley Road / Kaiser Hospital	D	A	0.25	A	0.27
6	Deer Valley Road / Sand Creek Road	D	A	0.25	A	0.30
7	Kaiser Hospital / Sand Creek Road	D	-	-	-	-
8	PARK / Sand Creek Road	D	-	-	-	-
9	Project South Access / Sand Creek Road	D	-	-	-	-
10	Hillcrest Avenue / Sand Creek Road	D	-	-	-	-
11	Hillcrest Avenue / Project East Access	D	-	-	-	-
12	Hillcrest Avenue / Prewett Ranch Road	D	A	8.7	A	9.0
13	Hillcrest Avenue / Vista Grande Drive	D	A	0.11	A	0.11
14	Hillcrest Avenue / Lone Tree Way	D	A	0.54	B	0.64
15	Vista Grande Drive / Lone Tree Way	D	A	0.52	B	0.63
16	Heidorn Ranch Road / Lone Tree Way	D	A	0.44	A	0.55
17	Canada Valley Road / Lone Tree Way	D	B	0.62	B	0.69
18	SR-4 Bypass SB Ramps / Lone Tree Way	D	B	0.61	B	0.68
19	SR-4 Bypass NB Ramps (Jeffrey Way) / Lone Tree Way	D	A	0.30	A	0.36
20	Heidorn Ranch Road / Sand Creek Road	D	-	-	-	-
21	SR-4 Bypass / Sand Creek Road	D	B	0.63	B	0.69
22	SR-4 Bypass / Sand Creek Road	D	-	-	-	-
23	Mammoth Way / Deer Valley Road	D	A	0.18	A	0.18

f. Existing Conditions Traffic Signal Warrant Analysis

Traffic signals may be justified when traffic operations fall below acceptable thresholds and when one or more signal warrants are satisfied.

Existing traffic volumes at unsignalized intersections were compared against the peak hour warrant in the *Manual of Uniform Traffic Control Devices* published by the US Department of Transportation and which is the standard used by Antioch (and Caltrans). Traffic Signal Warrant #3 – Peak Hour Volume Warrant is satisfied when traffic volumes on the major and minor approaches exceed thresholds for one hour of the day. This warrant is generally the first warrant to be satisfied. The warrant applies to traffic conditions during a one hour peak that are sufficiently high such that minor street traffic experiences excessive delay in entering and crossing the street.

Results of the analysis showed the following intersection does not currently satisfy Traffic Signal Warrant #3:

- Hillcrest Avenue/Prewett Ranch Drive

Other warrants such as for minimum vehicle volumes, interruption of continuous traffic, and traffic progression were not evaluated because they generally require higher traffic volumes to be satisfied. Copies of the analysis summaries for Warrant #3 are included in the **Technical Appendix**.

2. Environmental Analysis

a. Analysis Approach

Traffic impacts are assessed at 22 critical intersections in the study area for the following development conditions:

- No Project Alternative – Includes near-term (year 2011) and long-term (year 2025) analyses without the proposed project. Year 2011 analysis is based on existing traffic volumes and traffic added by approved/pending developments that are not yet completed and on a street network anticipated to occur in the year 2011. The near-term horizon corresponds to the estimated completion year of the Aviano Adult Community project. The year 2025 analysis is based on traffic forecast data and roadway improvements anticipated to be completed by the year 2025. Year 2025 corresponds to the General Plan buildout horizon year and available traffic forecast from the City of Antioch.

- Proposed Adult Community Alternative – Includes year 2011 and 2025 analyses with the proposed Adult Community. Year 2011 analysis is based on background traffic volumes (i.e. existing plus approved/pending traffic) and traffic generated by the Adult Community. The near-term analysis includes a street network anticipated to occur at the time of the completion of the project. Year 2025 analysis is based on 2025 traffic forecast data with the proposed Adult Community, and includes roadway improvements anticipated to be completed by the year 2025.

b. Criteria of Significance

Measure C established a sales tax to be used to fund transportation improvements in Contra Costa County. The measure includes a growth management program and requires Contra Costa Transportation Authority (CCTA) to develop a comprehensive transportation plan and update it every other year. To receive a share of the sales tax generated by Measure C, local jurisdictions must adhere to the level of service (LOS) standards that Measure C applies to local streets and roads. The standards are applied to streets and roads for which the jurisdictions are responsible. Each jurisdiction must

take appropriate action to ensure that the LOS standards are met, including routes of regional significance. Designated regional routes include all the freeways and state highways, and the most significant arterials in Contra Costa County.

Contra Costa Transportation Authority (CCTA) classifies several roadways in the project study area including Lone Tree Way, Deer Valley Road, Sand Creek Road, and State Route 4 Bypass as routes of regional significance. As such, intersections along the routes require analysis utilizing Growth Management Program procedures outlined in CCTA Technical Procedures, September 17, 1997. The CCTA Technical Procedures require the use of CCTALOS software to determine intersection operation levels based on the Intersection Capacity Utilization (ICU) methodology. The methodology describes the operation of an intersection in terms of Level of Service (LOS) based on corresponding volume to capacity (v/c) ratio.

As previously noted, levels of service are represented by a letter scale from LOS A to LOS F, with LOS A representing the best performance and LOS F representing the poorest performance under significantly congested conditions. CCTA set maximum levels of congestion for routes of regional significance such as intersections along Lone Tree Way, Deer Valley Road, Sand Creek Road and the SR-4 Bypass. According to the CCTA requirements, LOS D (i.e. v/c up to 0.85) is an acceptable level of traffic operation at intersections on the routes of regional significance in the study area. Furthermore, intersections to be evaluated under CCTA requirements include signalized intersections that are expected to be affected by 50 or more project trips in a peak period.

In addition, the Contra Costa Transportation Authority (CCTA) and its subsequent Regional Transportation Planning Committees have also set various standards in order to measure effectiveness on specific roadways, called Traffic Service Objectives (TSOs). In the study area, the delay index on routes of regional significance should be less than 2.0. That is to say the ratio of congested travel time vs. uncongested travel time along the corridor should be less than 2.0 during the AM peak as well as during the PM peak period.

For streets not designated as regionally significant, local standards apply. The Antioch General Plan adopted November 2003 states that where feasible, signalized intersections along design arterial roadways will strive to maintain a "High D" level of service (v/c – 0.85-0.89) within regional commercial areas and at intersections within 1,000 feet of a freeway interchange.

Unsignalized intersections are not specifically covered in the CCTA or General Plan requirements; however, in harmony with the intent of the General Plan, this report considered a "High D" level of service (LOS) to be an acceptable level of operation at unsignalized intersections. Unsignalized intersections were evaluated using *Highway Capacity Manual* methodology which bases LOS on average delay per vehicle.

Based on Antioch, Brentwood, and CCTA requirements, traffic analysis to determine level of service was completed using the CCTALOS module within TRAFFIX software at signalized intersections and the Highway Capacity Manual (HCM) module within TRAFFIX at unsignalized intersections. The CCTALOS module in TRAFFIX is a CCTA-approved alternative to the stand-alone CCTALOS software. Traffic service objectives and vehicle queuing at signalized intersections was determined using SYNCHRO software which is based on the methodology of the *Highway Capacity Manual*. The CCTALOS module within TRAFFIX software is based on the Intersection Capacity Utilization (ICU) methodology.

A significant impact was assumed to occur if levels of service (or intersection capacity) at the study intersections drop below the established thresholds. Mitigation may be required when traffic from the project causes the intersection to operate below acceptable levels of traffic operation.

The effects of vehicle queuing were analyzed and a significant impact was assumed to occur if the queue increases by one or more vehicles (a vehicle being 25 feet long) and the vehicle queue exceeds the turn pocket length.

The proposed project would also create a significant traffic impact if it would:

- Result in inadequate emergency access
- Result in inadequate parking capacity
- Generate pedestrian, bicycle, or transit travel demand that would not be accommodated by current pedestrian and bicycle facilities or transit service

c. No Project Alternative Conditions and Impacts

The No Project Alternative represents the evaluation of traffic conditions without the construction of the proposed Aviano Adult Community (or any other project alternative). The No Project Alternative includes evaluation of two horizon years. The first horizon year (i.e. 2011) corresponds with the year of the proposed completion of the Aviano project. The analysis is based on existing traffic volumes and traffic added by approved and pending developments that are not yet completed and on a street network anticipated to occur in the year 2011. Intersection geometry and traffic control includes mitigation associated with already approved projects. The second horizon year in 2025 corresponds with the Antioch General Plan buildout horizon year and available traffic forecast from the City of Antioch. This analysis is based on traffic forecast data and roadway improvements anticipated to be completed by the year 2025.

(1) Nearby Approved Developments

Several development projects in the vicinity of the Aviano Adult Community site are in various stages of planning or development. Many of these projects will ultimately be developed before or roughly the same time as the Aviano project. Information on nearby approved and pending projects was provided by the City and is included in the **Technical Appendix**.

These projects are approved for construction or are pending for approval but are not completed or occupied. Some projects are either or too far or are expected to generate too little traffic to have a notable effect on traffic in the vicinity of the Aviano Adult Community; therefore, only projects in reasonable proximity or size to the Aviano site were included in this analysis. Projects included in this study are listed in **Table IV.B-3**.

Table IV.B-3: Approved and Pending Developments Included in Analysis

Project Name	Location[1]	Size[2]	Status
Laurel Ranch	N & S of Laurel Rd, W of SR-4 Bypass (A)	217 DU	In process
Rennaissance at Bluerock & Bluerock Center	Lone Tree & Golf Course Rd (A)	86 DU 246.6 KSF Office	Under Construction
Davidon Homes	Vista Grande, E of Canada Valley Rd (A)	538 DU	In process
Deer Valley Business Park	Deer Valley Rd & Country Hills (A)	82.0 KSF Office 92.982 KSF Retail 57.993 KSF Community College	Under Construction Community College occupied
Hidden Glen	Off Hillcrest, N of Lone Tree (A)	363 DU	Under construction
Kaiser Hospital	Deer Valley Rd, S of Lone Tree (A)	427.4 KSF Hospital 173 KSF Med Office	Under construction
Lone Tree Landing Retail Center	N of Lone Tree, E of Hillcrest (A)	81.963 KSF Retail	Under Construction
Lowe's Home Improvement	NE Corner Lone Tree & Canada Valley Rd (A)	170.7 KSF	Completed
Meadow Creek Crossing	Heidorn Ranch Rd, S of Lone Tree (A)	49 DU	Under construction
Nelson Ranch Homes	S of SR-4 (A)	354 DU	Approved
Sand Creek Ranch	N of Country Hills, W of Canada Valley Rd (A)	490 DU	Under construction
Mercy Housing	N side of Sand Creek, E of Streets of Brentwood (B)	96 DU	Under construction
Williamson Ranch Plaza Phases III & IV	NS of Lone Tree, W of Indian Hill (A)	12 KSF Office 6 KSF Restaurant	Under construction (Restaurant complete)
Wal-Mart Expansion	N of Lone Tree, W of Hillcrest (A)	73.506 KSF	Approved
Venture Commerce Center	Lone Tree Way/Vista Grande (A)	92.155 KSF Office	Completed
Amber Park	S of Lone Tree, E of Empire (B)	118 DU	Under construction
Arcadia Shopping Center	Lone Tree, E of Heidorn Ranch Rd (B)	534 KSF Shop Ctr 25 KSF Office	Under construction
Shady Willow Plaza	S of Lone Tree, E of Shady Willow (B)	29.6 KSF Retail	Approved
Tri-City Plaza	SE of Lone Tree and Fairview (B)	50.647 KSF Retail	Under construction
Visions at Brentwood	SE of Lone Tree and Windy Springs (B)	42 DU	Under construction
Winco Shopping Center	N of Lone Tree, E of Empire (B)	14 KSF Retail	Under construction
Brentwood Station	S of Lone Tree, E of Jeffrey (B)	5.725 KSF Co-Brand 11.2 KSF Restaurant 65 KSF Fitness Ctr 14.4 KSF Retail	Under construction
Brighton Station	E of SR-4, N of Sand Creek (B)	169 DU	Under construction
Streets of Brentwood	E of SR-4, S of Sand Creek (B)	446.1 KSF	In process
Mancini's Sleep World	S of Lone Tree, E of Shady Willow (B)	14.618 KSF	Approved
Empire Crossings	S of Lone Tree, W of Empire (B)	23.6 KSF Retail	Approved
Best Buy	N of Lone Tree, E of Empire (B)	60.1 KSF	Under construction
Alexandra Homes	N side of Sand Creek, W of Fairview (B)	37 DU	Approved

Project Name	Location[1]	Size[2]	Status
LT Towne Plaza	N of Lone Tree, E of Windy Springs (B)	118.229 KSF Retail	Approved
Carmel Estates	E of Minnesota, N of Randy Way (B)	106 DU	Approved
Terreno Homes	N of Sand Creek, E of Railroad tracks (B)	244 DU	Under construction
Oncology Center	Dallas Ranch Rd S of Lone Tree (A)	40 KSF medical office (2 - 20KSF bldgs)	Approved
Medical Office Bldg	Hillcrest Ave, S of Deer Valley (A)	4 story medical office bldg (36 KSF)	Under construction
Commons at Dallas Ranch (senior care facitility)	4751 Dallas Ranch Rd (A)	76.741 KSF residential care facility 25 apartments	Completed
County Square Market (Asian food)	Larkspur off of Hillcrest (A)	30.860 KSF	Approved
Antioch Surgical Center	Hillcrest Ave, S of Deer Valley (A)	55 KSF outpatient surgery 52 KSF medical office bldg	In process (application not complete)
Hillcrest Professional Center	Hillcrest Ave, S of Deer Valley (A)	31.26 KSF Office/Condo	Completed
Non-Senior Homes	Deer Valley Rd, S of Lone Tree (A)	300 DU	Application not filed - but moving forward
Balfour Retail Center	N of Balfour, W of W Country Club Dr (B)	23.150 KSF Retail	Under construction
Bridle Gate	W of SR-4, S of Sand Creek (B)	166 DU	Approved
Blackhawk-Nunn-Cox Property	W of SR-4, N of Balfour (B)	66 DU	Under construction
Meridian Professional Office	W of SR-4, N of Balfour (B)	32.036 KSF Office	Under construction
Balfour Retail	E of John Muir Pkwy, N of Balfour (B)	26.7 KSF Retail	In process
Vic Stewarts	S of Balfour, E of John Muir Pkwy (B)	31.457 KSF Restaurant	In process
Kindercare	S of Balfour, W of John Muir Pkwy (B)	9.3 KSF	Approved
Senior Apartments - Cox Property	W of SR-4, N of Balfour (B)	120 DU	Under construction
Capital and Counties	N/O JC Penney between Slaten Ranch Road and Empire Avenue (A)	319.84 KSF Retail	Development Anticipated (Long-Term)
Office	On Slaten Ranch Road S/O Laurel Road (A)	1428.5 KSF	Development Anticipated (Long-Term)
Deer Valley Estates	East of Deer Valley Road, N/O Kaiser Hospital (A)	136 DU	In process
eBART	Neroly Rd (A & O)	1000 parking spaces	Development Anticipated (Long-Term)
JC Penney	Slaten Ranch Road N/O Lone Tree Way (A)	128.325 KSF	In process
Magnet High School	Sand Creek Road W/O Aviano Development (A)	800 students	Approved

[1] (A) = Antioch; (B) = Brentwood; (O) = Oakley.

[2] DU = dwelling units, KSF = thousand square feet.

(2) Near-Term Traffic Volumes

An estimate of trips generated by the approved and pending projects was derived from information provided by the cities of Antioch and Brentwood. To the extent data was available, trip generation, trip distribution, and traffic assignments to the roadway network was obtained directly from the city-provided information. In some instances, no traffic data was available, particularly for smaller projects; therefore, Kimley-Horn calculated trip generation using the Institute of Transportation Engineers' publication *Trip Generation, 7th Edition* and used engineering judgment in assigning traffic at the study intersections. **Figure IV.B-5** shows approved and pending development traffic at the study intersections.

Existing traffic volumes were combined with vehicle trips expected to be generated by the approved and pending projects to identify 2011 near-term cumulative traffic volumes (i.e. existing plus approved/pending project traffic). **Figure IV.B-6** illustrates near-term traffic volumes anticipated to exist regardless of the proposed Aviano Adult Community project.

In the near-term, there will be a temporary access road from Kaiser extending east to connect to connect to the High School Access Road (HSAR). The temporary road is under construction and will be used for access to the Magnet School and for emergency access until Sand Creek Road is constructed from Hillcrest Avenue west to the Magnet School. It should be noted that for the purpose of analyzing the effect of the project on the study intersections, in the near-term without project the Magnet High School was assumed to gain access to the HSAR via Sand Creek Road, Hillcrest Avenue and Lone Tree Way. The Magnet School traffic can be accommodated in the near-term via the temporary access from Kaiser until Sand Creek Road is built by the Aviano Adult Community project developer. After construction of Sand Creek Road from Hillcrest west to the Magnet School, the traffic volumes will be higher at the intersection of Lone Tree Way/Deer Valley Road and lower at Lone Tree Way/Hillcrest Avenue.

(4) Planned Transportation Improvements

Several roadway improvements are planned for the study area intersections in the near-term 2011 and long-term 2025.

In the near-term Hillcrest Avenue will be extended south from Prewett Ranch Road and Sand Creek Road will be constructed from the newly extended Hillcrest Avenue west to the intersection with the High School Access Road. Also in the near-term the Sand Creek Road/SR-4 Bypass Interchange will be completed. According to the City, intersection improvements anticipated to be completed on or before 2011 include the following:

- Intersection #1 – Deer Valley Road/Lone Tree Way – On Deer Valley Road a second southbound left turn lane will be added and an exclusive northbound right

turn lane will be added and the existing through-shared-right lane will be restriped to a through lane.

- Intersection #8 – High School Access/Sand Creek Road – Install a new traffic signal and extend Sand Creek Road east with two lanes in each direction with turn lanes.

- Intersection #9 – Project South Access/Sand Creek Road – Install a new traffic signal with the Aviano Adult Community and extend Sand Creek Road east with two lanes in each direction with turn lanes.

- Intersection #10 – Hillcrest Avenue/Sand Creek Road – Install a new traffic signal, extend Sand Creek Road east with two lanes in each direction with turn lanes, and extend Hillcrest Avenue south to Sand Creek Road with turn lanes.

- Intersection #11 – Hillcrest Avenue/Project East Access – Install a new traffic signal with the Aviano Adult Community and extend Hillcrest Avenue south with two lanes in each direction with turn lanes.

- Intersection #12 – Hillcrest Avenue/Prewett Ranch Road – Activate the signal out of flash operation into actuated timing and extend Hillcrest Avenue south with two lanes in each direction with turn lanes.

- Intersection #14 – Lone Tree Way/Hillcrest Avenue – Construct a second new southbound left-turn lane to eastbound Lone Tree Way for 855' and lengthen the existing turn bay to 600' as well as change the southbound left-shared-through lane to a through lane, and lengthen the westbound right-turn lane on Lone Tree Way to northbound Hillcrest Avenue turn bay to 730'. These improvements are funded and currently in the design phase.

- Intersection #18 – Lone Tree Way/SR-4 Bypass SB Off-Ramp – With the completion of the north segment of the bypass, the following changes will take place to the intersection:

    - An additional westbound Lone Tree Way left-turn lane to southbound SR-4 bypass for 310' will be constructed as well as an additional westbound through lane, and
    - In the southbound direction on the SR-4 Bypass off-ramp there will be a 280' left-turn lane, a left-shared-through lane, and a right-turn lane.

  These improvements are completed but the existing conditions analysis was conducted before the Bypass was completed.

- Intersection #19 – Lone Tree Way/SR-4 Bypass NB Ramps (Jeffrey Way) – With the completion of the north segment of the bypass, the following changes will take place to the intersection:

    - Northbound vehicles exiting the SR-4 Bypass will exit onto Jeffrey Way making the northbound lane configuration on Jeffrey Way a 1000' left-turn lane, a through-shared-left lane, and a right turn lane,
    - In the westbound direction on Lone Tree Way the shared through-right lane that currently exists will be a through lane and a third through lane and westbound right-turn lane to northbound SR-4 Bypass for 250' will be constructed, and
    - In the eastbound direction on Lone Tree Way the left-shared-through lane will be a through lane, the through-shared-right lane will be a through lane, and an eastbound right-turn lane to southbound Jeffrey Way for 240' will be constructed.

    These improvements are completed but the existing conditions analysis was conducted before the Bypass was completed.

- Intersection #21 – SR-4 Bypass SB Ramps/Sand Creek Road – With the completion of this intersection, the following will be in place:

    - Eastbound Sand Creek Road will be two through lanes and a 100 foot right-turn lane to the southbound SR-4 Bypass, and
    - Southbound SR-4 Bypass will be an exclusive 325 foot left-turn lane for eastbound Sand Creek Road, a shared left-through-right lane, and an exclusive 225 foot right-turn lane for westbound Sand Creek Road, and
    - Westbound Sand Creek Road will be two through lanes.

- Intersection #22 – SR-4 Bypass NB Ramps/Sand Creek Road – With the completion of this intersection, the following will be in place:

    - Eastbound Sand Creek Road will be two 100 foot left-turn lanes to the northbound SR-4 Bypass and two through lanes, and
    - Northbound SR-4 Bypass will be an exclusive 200 foot left-turn lane for westbound Sand Creek Road, a shared left-right lane, and an exclusive 225 foot right-turn lane for eastbound Sand Creek Road, and
    - Westbound Sand Creek Road will be two through lanes and a 350 foot right-turn lane to the northbound SR-4 Bypass.

The City has restriped Lone Tree Way to three lanes in each direction from Hillcrest Avenue to the east Antioch City limits in concurrence with the opening of the SR-4 Bypass to the north but the restriping was not complete when the existing conditions analysis was conducted.

With the completion of the north leg of the SR-4 Bypass some existing traffic volumes on local streets are expected to shift to the SR-4 Bypass; however, the exact volume is uncertain in the near term because the analysis was completed before the Bypass was completed. Long-term travel forecast information from the Contra Costa Transportation Authority (CCTA) indicates that hundreds of peak hour vehicles will be diverted and which are included in the long-term analysis. In the near-term, the number of diverted vehicles is expected to be less but a near-term forecast (with the SR-4 Bypass) was not available from CCTA to confirm specific volumes. Although the exact numbers are unknown, the effect will be to reduce current background traffic levels in the study area, principally on Hillcrest Avenue and on Lone Tree Way between Hillcrest Avenue and the SR-4 Bypass.

Although a diversion is expected in connection with the Bypass, existing traffic was not manually reallocated in the near-term analysis. Instead, existing traffic volumes were left unchanged to represent a more conservative analysis at the study intersections. Thus, actual levels of service and vehicle queuing in this traffic study are expected to be better than reported.

In the long-term, Sand Creek Road will be extended from Hillcrest Avenue to connect to the SR-4 Bypass Interchange as well as west of Deer Valley Road to Dallas Ranch Road. Heidorn Ranch Road will be extended to the south to connect with Sand Creek Road. According to the City, long-term (2025) improvements include the following:

- Intersection #4 – Deer Valley Road/Wellness Way – Deer Valley Road will be widened to two lanes in the southbound direction with two southbound left turn lanes and a new west leg will be added and striped with a left and a through-shared right in the eastbound direction.

- Intersection #5 – Deer Valley Road/Kaiser Way – Widen the southbound approach to two through lanes.

- Intersection #6 – Deer Valley Road/Sand Creek Road – Widen all approaches for an additional through lane.

- Intersection #7 – Kaiser Way/Sand Creek Road – Install a new traffic signal and extend Sand Creek Road east with three lanes in each direction with turn lanes. The intersection will have four approaches.

- Intersection #8 – Sand Creek Road/High School Access – Reconfigure intersection to add a south leg.

- Intersection #10 – Hillcrest Avenue/Sand Creek Road – Reconfigure intersection to add a south leg, a second eastbound left turn lane, and an exclusive southbound right turn lane.

- Intersection #11 – Hillcrest Avenue/Project East Access – Reconfigure intersection to add an east leg.

- Intersection #20 – Heidorn Ranch Road/Sand Creek Road – Install a new traffic signal, extend Sand Creek Road east with two lanes in each direction with turn lanes, and extend Heidorn Ranch Road south to Sand Creek Road with turn lanes.

The City also plans to restripe Lone Tree Way from James Donlon to Hillcrest Avenue as well as Sand Creek Road to three lanes in each direction in the long-term. The roadway will be wide enough for three lanes in each direction in the near-term, but will only striped for two lanes with right turn bays.

In addition to the projects listed above, other system expansion and roadway extension projects are planned outside of the project study area and are assumed to be in place by the years 2011 and 2025. These projects are included in the City's travel forecast model and result in some shifts in traffic from existing corridors and intersections evaluated in this traffic study.

(5) Near-Term Lane Configurations and Traffic Control

Figure IV.B-4 illustrates the roadway geometry and traffic control expected to be in place in 2011 regardless of the proposed Aviano Adult Community. The improvements are anticipated to be in place before or at approximately the same time as the proposed completion year of the Adult Community. Year 2011 analysis without the Aviano project was completed based on these assumptions for near-term lane configurations and traffic control.

(3) Long-Term Traffic Volumes

Additional development projects are expected to be completed by the year 2025 and will contribute to a long-term increase in background traffic regardless of the Aviano project. These projects include growth in land uses located within the City's urban growth limit such as residential, industrial, business park, and commercial, as well as growth outside of Antioch. This land use growth comprises the long-term cumulative traffic forecast. The long-term forecast for this study is based on the year 2025 modeling prepared for the buildout of the Antioch General Plan. Kimley-Horn received from the City the 2025 forecast data and turning movement volumes for roadways in the study area.

An estimate of trips generated by the three anticipated long-term development projects (listed in **Table IV.B-3**) was derived from information provided by the cities of Antioch and Brentwood. No traffic data were available, therefore, Kimley-Horn calculated trip generation using the Institute of Transportation Engineers' publication Trip Generation, 7th Edition coupled with engineering judgment in assigning traffic at the study intersections. **Figure IV.B-8** shows the cumulative (2025) intersection traffic volumes

without the project which are comprised of the long-term cumulative traffic forecast and the three cumulative projects.

(6) Long-Term Lane Configurations and Traffic Control

Figure IV.B-7 illustrates the intersection geometry and traffic control assumed in the 2025 long-term analysis.

(7) No Project Level of Service Conditions

Traffic operations were evaluated under the following development conditions:

- Near-term conditions without project (year 2011)
- Long-term conditions without project (year 2025)

Results of the analysis are presented in **Table IV.B-4**. Additional detail is provided in the **Technical Appendix**. As seen in the results, the following intersections will fail to meet acceptable level of service thresholds based on established significance criteria, regardless of the proposed Aviano project. (Results shown as bold in the table do not meet operational standards.)

2011 Results
All intersections operate acceptably

2025 Results
- Intersection #14 – Hillcrest Avenue/Lone Tree Way
- Intersection #16 – Heidorn Ranch Road/Lone Tree Way
- Intersection #17 – Canada Valley Road/Lone Tree Way
- Intersection #18 – SR-4 Bypass SB Ramps/Lone Tree Way
- Intersection #19 – SR-4 Bypass NB Ramps (Jeffrey Way)/Lone Tree Way
- Intersection #21 – SR-4 Bypass SB Ramps/Sand Creek Road

Table IV.B-4: No Project Alternative Level of Service Conditions

	Intersection	Existing				Near-Term				Cumulative			
		AM Peak		PM Peak		AM Peak		PM Peak		AM Peak		PM Peak	
		LOS	V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay
1	Lone Tree Way / Deer Valley Road	B	0.68	B	0.67	D	0.80	C	0.77	C	0.78	B	0.68
2	Deer Valley Road / Marita Drive	A	0.33	A	0.27	A	0.40	A	0.34	A	0.40	A	0.34
3	Deer Valley Road / Prewett Ranch Drive	A	0.48	A	0.37	A	0.60	A	0.47	B	0.65	B	0.62
4	Deer Valley Road / Wellness Way	A	0.34	A	0.26	A	0.48	A	0.34	A	0.51	B	0.62
5	Deer Valley Road / Kaiser Hospital	A	0.25	A	0.27	A	0.35	A	0.35	A	0.46	A	0.48
6	Deer Valley Road / Sand Creek Road	A	0.25	A	0.30	A	0.34	A	0.37	B	0.67	B	0.66
7	Kaiser Hospital / Sand Creek Road	-	-	-	-	A	0.02	A	0.02	A	0.32	A	0.43
8	PARK / Sand Creek Road	-	-	-	-	A	0.26	A	0.05	A	0.59	A	0.48
9	Project South Access / Sand Creek Road	-	-	-	-	A	0.12	A	0.02	A	0.16	A	0.19
10	Hillcrest Avenue / Sand Creek Road	-	-	-	-	A	0.26	A	0.05	A	0.41	A	0.59
11	Hillcrest Avenue / Project East Access	-	-	-	-	A	0.13	A	0.03	A	0.50	A	0.46
12	Hillcrest Avenue / Prewett Ranch Road	A	8.7	A	9.0	A	0.27	A	0.18	A	0.47	A	0.59
13	Hillcrest Avenue / Vista Grande Drive	A	0.11	A	0.11	A	0.19	A	0.15	A	0.45	A	0.45
14	Hillcrest Avenue / Lone Tree Way	A	0.54	B	0.64	B	0.65	C	0.73	F	1.08	F	1.19
15	Vista Grande Drive / Lone Tree Way	A	0.52	B	0.63	A	0.47	B	0.61	A	0.55	B	0.69
16	Heidorn Ranch Road / Lone Tree Way	A	0.44	A	0.55	A	0.37	A	0.50	C	0.78	E	0.92
17	Canada Valley Road / Lone Tree Way	B	0.62	B	0.69	B	0.69	D	0.84	F	1.06	F	1.19
18	SR-4 Bypass SB Ramps / Lone Tree Way	B	0.61	B	0.68	A	0.41	A	0.55	C	0.75	E	0.93
19	SR-4 Bypass NB Ramps (Jeffrey Way) / Lone Tree Way	A	0.30	A	0.36	A	0.54	B	0.69	E	0.92	F	1.07
20	Heidorn Ranch Road / Sand Creek Road	-	-	-	-	-	-	-	-	A	0.30	A	0.30
21	SR-4 Bypass SB Ramps / Sand Creek Road *	B	0.63	B	0.69	A	0.16	A	0.24	B	0.68	D	0.86
22	SR-4 Bypass NB Ramps / Sand Creek Road	-	-	-	-	A	0.39	A	0.36	A	0.48	A	0.58
23	Mammoth Way / Deer Valley Road	A	0.18	A	0.18	A	0.24	A	0.24	A	0.35	A	0.35

* Intersection modified from existing condition

Poor levels of service are related to long-term traffic levels in excess of intersection capacity.

All the poor levels of service are expected to occur regardless of the Aviano project. It should be noted that between the near-term and the long-term at the intersection of Deer Valley Road/Lone Tree Way the level of service worsens during the AM peak and improves during the PM peak with the completion of the restriping to three lanes on Lone Tree Way. The critical movements during the AM and PM peaks in the eastbound direction are the right turn and the through movement, respectively. When the exclusive right turn is restriped to a through-shared-right, the level of service improves during the PM peak where the through movement is critical and becomes worse during the AM peak where the right turn is critical.

d. Proposed Aviano Adult Community Alternative Impacts and Mitigation Measures

(1) Proposed Project Description

The Aviano Adult Community is proposed to include 535 senior detached housing dwelling units. Completion of the project is estimated to occur by 2011.

(2) Site Access

The residential development site is assumed to have two access roads out of the development as described below and shown in **Figure IV.B-11**:

- Hillcrest Avenue Access – The access will be on Hillcrest Avenue on the east side of the development, south of Prewett Ranch Drive.
- Sand Creek Road Access – A second access will be on Sand Creek Road on the south side of the development, approximately a third of the way between Hillcrest Avenue and the High School Access intersection.

(3) Trip Generation

Trip generation for development projects is typically calculated based on rates contained in the Institute of Transportation Engineers' publication, *Trip Generation 7th Edition* unless more detail local data is available *Trip Generation* is a standard reference used by jurisdictions throughout the country for the estimation of trip generation potential of proposed developments.

A trip is defined in *Trip Generation* as a single or one-directional vehicle movement with either the origin or destination at the project site. In other words, a trip can be either "to" or "from" the site. In addition, a single customer visit to a site is counted as two trips (i.e. one to and one from the site).

For purposes of determining the worst-case impacts of traffic on the surrounding street network, the trips generated by a proposed development are typically estimated between the hours of 6:00-8:00 AM and 4:00-6:00 PM. While the project itself may generate more traffic during some other time of the day the peak of "adjacent street traffic" represents the time period when the uses generally contribute to the greatest amount of congestion and potential mitigation, with the PM peak commonly being the greatest congestion period. For this reason, this evaluation focused on the weekday AM and PM peaks.

The Aviano Adult Community is most appropriately classified as Senior Adult Housing-Detached (ITE Land Use 251). In preparation of trip generation calculations, data from ITE *Trip Generation* was reviewed and supplemented with trip generation data of three active adult residential developments in northern California constructed by Pulte Homes.[1] The results of the study indicate that one of the developments is generating trips at a rate lower than the published rate (ITE LU 251) and the other two developments were generating more trips than the published rate. At the direction of city staff, it was conservatively assumed that the development would be generating as many trips as the Pulte development with the highest rate.

[1] Active Adult Residential Developments Trip Generation Study, Fehr & Peers Associates, Inc.

Trip generation was calculated based on the previous discussions and is reported in **Table IV.B-5**. Additional trip generation calculations are contained in the **Technical Appendix**.

Table IV.B-5: Proposed Adult Community Alternative Trip Generation

LAND USE	Trip Rate					
	AM Peak Hour			PM Peak Hour		
	In	Out	Total	In	Out	Total
Senior Adult Housing – Detached	0.11	0.18	0.29	0.21	0.13	0.34
	Trips					
	AM Peak Hour			PM Peak Hour		
	In	Out	Total	In	Out	Total
Senior Adult Housing – Detached (535 DU)	59	96	155	113	69	182
Net New Vehicle Trips	59	96	155	113	69	182

(4) Trip Pass-By Reduction

Often with a new development a certain amount of trips to the site are vehicle trips that are already on the road and will choose to stop as they pass by the site. These vehicle trips are not represented as new vehicle trips but are considered to be pass-by trips. Due to the nature of the single family residential land use, no pass-by trips are expected and therefore no pass-by trip reduction was applied to the project trip generation.

(5) Trip Distribution and Assignment

Project trip distribution was based on information from the City's traffic model as provided by City staff as well as based on existing traffic patterns and field observations. **Figure IV.B-9 and Figure IV.B-10** shows the traffic distribution assumed in this traffic report.

Based on the assumed trip distribution, new vehicle trips generated by the Proposed Aviano Adult Community Alternative were assigned to the street network as shown in **Figure IV.B-12 and Figure IV.B-13**.

(6) Near-Term Plus Project Traffic Volumes

Near-term traffic volumes were combined with net new vehicle trips expected to be generated by the Proposed Aviano Adult Community Alternative to determine a near-term cumulative plus project condition as shown in **Figure IV.B-14**.

(7) Long-Term Plus Project Traffic Volumes

Net new project trips were added to the long-term forecast to determine a long-term cumulative plus project condition. **Figure IV.B-14** illustrates turning movement volumes at the study intersections under this development condition.

(8) Proposed Project Level of Service Conditions and Impacts

Traffic operations were evaluated under the following development conditions:

- Near-term conditions with project (year 2011)
- Long-term conditions with project (year 2025)

Year 2011 and 2025 analyses were completed based on corresponding year assumptions for near-term and long-term lane configurations and traffic control.

As noted previously, a significant project impact would occur if any of the following conditions arise at study intersections:

- If levels of service (or intersection capacity) at the study intersections drop below the established thresholds.
- If the queue increases by one or more vehicles (a vehicle being 25 feet long) and the vehicle queue exceeds the turn pocket length.
- If the project generates pedestrian, bicycle, or transit travel demand that would not be accommodated by current pedestrian and bicycle facilities or transit service.

Results of the analysis are presented in **Table IV.B-6**. Additional detail is provided in the **Technical Appendix**. As seen in the results, the following intersections will fail to meet acceptable level of service thresholds based on established significance criteria. (Results shown as bold in the table do not meet operational standards.)

2011 Results
All intersections operate acceptably

2025 Results
- Intersection #14 – Hillcrest Avenue/Lone Tree Way
- Intersection #16 – Heidorn Ranch Road/Lone Tree Way
- Intersection #17 – Canada Valley Road/Lone Tree Way
- Intersection #18 – SR-4 Bypass SB Ramps/Lone Tree Way
- Intersection #19 – SR-4 Bypass NB Ramps (Jeffrey Way)/Lone Tree Way
- Intersection #21 – SR-4 Bypass SB Ramps/Sand Creek Road

Table IV.B-6: Proposed Alternative Level of Service Conditions

	Intersection	Near-Term				Near-Term + Project				Cumulative				Cumulative + Project			
		AM Peak		PM Peak		AM Peak		PM Peak		AM Peak		PM Peak		AM Peak		PM Peak	
		LOS	V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay
1	Lone Tree Way / Deer Valley Road	D	0.80	C	0.77	D	0.82	C	0.79	C	0.78	B	0.68	C	0.78	B	0.68
2	Deer Valley Road / Marita Drive	A	0.40	A	0.34	A	0.40	A	0.35	A	0.40	A	0.34	A	0.40	A	0.34
3	Deer Valley Road / Prewett Ranch Drive	A	0.60	A	0.47	B	0.60	A	0.47	B	0.65	B	0.62	B	0.65	B	0.62
4	Deer Valley Road / Wellness Way	A	0.48	A	0.34	A	0.48	A	0.34	A	0.51	B	0.62	A	0.51	B	0.62
5	Deer Valley Road / Kaiser Hospital	A	0.35	A	0.35	A	0.35	A	0.36	A	0.46	A	0.48	A	0.46	A	0.48
6	Deer Valley Road / Sand Creek Road	A	0.34	A	0.37	A	0.34	A	0.37	B	0.67	B	0.66	B	0.67	B	0.67
7	Kaiser Hospital / Sand Creek Road	A	0.02	A	0.02	A	0.02	A	0.02	A	0.32	A	0.43	A	0.32	A	0.43
8	PARK / Sand Creek Road	A	0.26	A	0.05	A	0.26	A	0.05	A	0.59	A	0.48	A	0.59	A	0.48
9	Project South Access / Sand Creek Road	A	0.12	A	0.02	A	0.13	A	0.03	A	0.16	A	0.19	A	0.18	A	0.21
10	Hillcrest Avenue / Sand Creek Road	A	0.26	A	0.05	A	0.26	A	0.06	A	0.41	A	0.59	C	0.41	A	0.59
11	Hillcrest Avenue / Project East Access	A	0.13	A	0.03	A	0.19	A	0.10	A	0.50	A	0.46	A	0.54	A	0.49
12	SR-4 Bypass NB Ramps (Jeffrey Way) / Lone Tree	A	0.27	A	0.18	A	0.29	A	0.21	A	0.47	A	0.59	A	0.48	B	0.60
13	Hillcrest Avenue / Vista Grande Drive	A	0.19	A	0.15	A	0.21	A	0.17	A	0.45	A	0.45	A	0.47	A	0.46
14	Hillcrest Avenue / Lone Tree Way	B	0.65	C	0.73	B	0.67	C	0.74	F	1.08	F	1.19	F	1.10	F	1.20
15	Vista Grande Drive / Lone Tree Way	A	0.47	B	0.61	A	0.48	B	0.61	A	0.55	B	0.69	A	0.55	B	0.69
16	Heidorn Ranch Road / Lone Tree Way	A	0.37	A	0.50	A	0.37	A	0.50	C	0.78	E	0.92	C	0.79	E	0.92
17	Canada Valley Road / Lone Tree Way	B	0.69	D	0.84	B	0.70	D	0.84	F	1.06	F	1.19	F	1.06	F	1.19
18	SR-4 Bypass SB Ramps / Lone Tree Way	A	0.41	A	0.55	A	0.42	A	0.57	C	0.75	E	0.93	C	0.75	E	0.94
19	SR-4 Bypass NB Ramps (Jeffrey Way) / Lone Tree Way	A	0.54	B	0.69	A	0.54	B	0.69	E	0.92	F	1.07	E	0.92	F	1.07
20	Heidorn Ranch Road / Sand Creek Road	-	-	-	-	-	-	-	-	A	0.30	A	0.30	A	0.30	A	0.30
21	SR-4 Bypass SB Ramps / Sand Creek Road *	A	0.16	A	0.24	A	0.16	A	0.24	B	0.68	D	0.86	B	0.68	D	0.86
22	SR-4 Bypass NB Ramps / Sand Creek Road	A	0.39	A	0.36	A	0.39	A	0.36	A	0.48	A	0.58	A	0.48	A	0.58
23	Mammoth Way / Deer Valley Road	A	0.24	A	0.24	A	0.24	A	0.24	A	0.35	A	0.35	A	0.35	A	0.35

* Intersection modified from existing condition

In the near-term, all of the Aviano Adult Community traffic can be accommodated at the Lone Tree Way/Hillcrest Avenue intersection before Sand Creek is extended west to Deer Valley Road.

As seen in the table, the project generally has a small incremental effect on v/c ratio but does not change the level of service at any intersection. At some intersections in the long-term, the addition of the project does not change the v/c ratio; therefore, the project does not create an impact in the long-term at those intersections.

The project does create an impact in the long-term at the following intersections:

- Intersection #14 – Lone Tree Way/Hillcrest Avenue
- Intersection #18 – SR-4 Bypass SB Ramps/Lone Tree Way

The long-term year 2025 analysis assumed that Sand Creek Road was striped as six lanes with left turn lanes. Based on level of service results, it appears that Sand Creek Road will operate acceptably in the year 2025 as a four-lane road. A supplemental analysis of Sand Creek Road in the year 2030 is included at the end of the report.

(9) Vehicle Queuing

As congestion increases it is common for traffic at signals and stop signs to form lines of stopped (or queued) vehicles. Queue lengths were determined for each lane and measure the distance that vehicles will backup in each direction approaching an intersection. The 95th percentile queue is calculated by using 95th percentile traffic to account for fluctuations in traffic and represents a condition where 95 percent of the

time during the peak period, traffic volumes and related queuing will be at, or less, than determined by the analysis. Average queuing is generally less. Ninety-fifth percentile queuing was checked under the various development conditions and in consideration of planned intersection and signal timing improvements. A typical vehicle length of 25 feet is used in the queuing analysis. A summary of the queuing results is included in the **Technical Appendix**. The results indicate dedicated turn lanes where queuing may exceed their storage limits. It should be noted that some variations in intersection queuing between scenarios is a result of planned intersection and signal timing improvements.

At most locations affected by the Aviano Adult Community the increase in vehicle queuing is less than one vehicle. However, as seen in the summary in the **Technical Appendix**, some turn bays are exceeded under near-term and long-term projected traffic volumes associated without and with the adult community.

The queuing deficiencies at the intersections are mainly due to the approved projects to be developed near the intersections; although the Aviano project will add to the length of the queue. The proposed Aviano Adult Community will increase the queue at the following intersections by one or more vehicle as listed below:

- Lone Tree Way/Hillcrest Avenue – WB left turn: <2 vehicles
  WB right turn: <2 vehicles
  NB left turn: <3 vehicles

Vehicle queues that extend out of the turn pockets can interfere with through traffic movements and create a potential increase in rear-end collisions. Therefore, the project was considered to create a significant impact at the locations where this condition was determined to occur.

(10) Potential Effects on Transit, Pedestrian, and Bicycle Mobility

As noted previously, the project would be considered to have a significant impact if it generated pedestrian, bicycle, or transit travel demand that would not be accommodated by current pedestrian and bicycle facilities or transit service.

The City of Antioch General Plan has several policies established to help maximize the amount of transit usage that occurs within the City. As they would pertain to this project, the relevant policies include:

- Preserve options for future transit use when designing roadway and highway improvements.
- Include Tri-Delta Transit in the review of new development projects and require new developments to provide transit improvements in proportion to traffic demands created by the project. Transit improvements may include direct and paved access to transit stops, provision of bus turnout areas and bus shelters, and roadway geometric designs to accommodate bus traffic.

Residents of Aviano Adult Community will have the option of driving, taking transit, walking or bicycling. For those taking transit they can travel to and from the neighborhood via Routes 384 and 388 on the Tri Delta Transit System.

According to the 2000 U.S. Census[2], only 4.3% of Antioch residents use transit to travel to work. This typically represents the highest level of transit ridership during the day. If it is conservatively assumed that 5% of residents will use transit during the peak hours of the day, it represents approximately 8 passengers in the weekday AM, 9 in the weekday PM.

Data was not readily available for peak hour ridership levels on the Tri Delta Transit System, but during the morning and evening periods, the two routes operate every 30 to 60 minutes and observations indicate the sufficient capacity exists on the buses to accommodate the potential additional transit demand. Furthermore, dispersion of the project-generated riders to the various bus routes would result in a minimal effect on transit capacity.

Although there are currently no transit stops or service adjacent to the project site it is anticipated that there will be in the future. The project should provide bus turn outs on Hillcrest Avenue at the Project East Access intersection and on Sand Creek Road at the South Project Access intersection. The bus turn outs should be located on the far side of each intersection. A bus turn out should also be provided on Sand Creek Road at the High School Access intersection. The addition of these bus stops will place most residents of the Aviano Community within a quarter mile walking distance of public transit. The project applicant should work with Tri-Delta Transit to coordinate the installation of the bus turnouts and amenities.

Based on the foregoing discussion, adequate capacity on existing transit routes exists to accommodate the small number of project residents projected to use the local transit service in Antioch. The project complies with applicable General Plan policies related to transit in general with the exception of providing direct paved access to transit stops, which would be eliminated with the inclusion of the bus turnouts on Hillcrest Avenue and Sand Creek Road. Thus the project impact on transit service is determined to be less than significant.

The City of Antioch General Plan has several bicycle and pedestrian circulation policies that would pertain to the proposed project:

- Design new residential neighborhoods to provide safe pedestrian and bicycle access to schools, parks and neighborhood commercial facilities.
- Design intersections for the safe passage of pedestrians and bicycles through the intersection.

[2] US Census Bureau, 2000 Employment – Journey to Work

- Provide street lighting that is attractive, functional, and appropriate to the character and scale of the neighborhood or area, and that contributes to vehicular, pedestrian, and bicycle safety.
- Maintain roadway designs that maintain mobility and accessibility for bicyclists and pedestrians.
- Integrate multi-use paths into creek corridors, railroad rights-of-way, utility corridors, and park facilities.
- Provide, as appropriate, bicycle lanes (Class II) or parallel bicycle/pedestrian paths (Class I) along all arterial streets and high volume collector streets, as well as along major access routes to schools and parks.
- Maximize visibility and access for pedestrians, and encourage the removal of barriers for safe and convenient movement of pedestrians.
- Ensure that the site design of new developments provides for pedestrian access to existing and future transit routes and transit centers.
- Pave walks and pedestrian pathways with a hard, all-weather surface that is easy to walk on. Walks and curbs should accommodate pedestrians with disabilities. Walks within open space areas should have specially paved surfaces that blend with the surrounding environment.
- In general, design walks to provide a direct route for short to medium distance pedestrian trips, and to facilitate the movement of large numbers of pedestrians. Meandering sidewalks are appropriate in areas where the natural topography or low-density land uses lend themselves to informal landscapes.

Based on 2000 Census data[2], even fewer residents are anticipated to walk or bicycle to or from the neighborhood.

Pedestrians will be able to use the continuous sidewalk facilities in the neighborhood and along study area roadways. This will allow Aviano Adult Community residents to conveniently walk to nearby destinations or access transit services. Pedestrian crosswalks are present on approaches at signalized intersections near the project site.

Cyclists will be able to use the Class II bicycle facilities near the project site. No capacity deficiencies are anticipated for pedestrian or bicycle facilities.

In addition, the project will construct necessary sidewalks, walkways, and other improvements in compliance with adopted policies, plans and programs; thus, the project's impact on transit, pedestrian or bicycle facilities is determined to be less than significant.

(11) Construction Impacts

The day-to-day construction operations for the proposed construction of the Aviano Adult Community will include traffic impacts related to construction employees, site grading, construction material importation, and more. However, because construction traffic generates significantly less than the project's traffic generation and

will occur partly outside of the peak hours it will not create additional impacts other than those already identified.

(12) On-Site Circulation & Parking

On site circulation was evaluated at the project's two driveways and within the project site. All site driveways will provide single lane ingress and egress, with left turn lanes out from the site.

Vehicular access to the Aviano Adult Community site is proposed from Hillcrest Avenue and Sand Creek Road. No other accesses were noted on the site plan even though Equestrian Way and Candlewood Way (located immediately north of the site) are stubbed out for a future connection into the Aviano development. Generally, this lack of vehicular connection to an adjacent neighborhood is not advised. Limited connectivity between residential areas promotes increase driving and congestion on nearby collector and arterial streets. However, because of the close proximity of the proposed high school, it was observed that if the connections were provided, a large volume of high school traffic would likely cut through the Aviano neighborhood. Therefore, the lack of street connections to the north is preferred to avoid conflicts with traffic associated with the high school.

Bicycle and pedestrian access will also occur at the Hillcrest and Sand Hill connections but should be provided to the north near Equestrian Way and Candlewood Way. These connections will permit increased access to the nearby linear greenway and other residential areas for cyclists and pedestrians but avoid undesirable motorized traffic.

Vehicular circulation in the Aviano Adult Community development is considered to be adequate but unfamiliar drivers may find the curvilinear layout and multiple cul-de-sacs confusing. On the other hand, the general layout which includes multiple intersections and curved street alignments will help limit potential speeding in the development.

Bicycle circulation will occur principally along the residential streets where traffic volumes and speeds are expected to be sufficiently low to permit cyclist and motorist to share the roadways. Pedestrian circulation will principally occur on sidewalks along the neighborhood streets. Secondary bicycle and pedestrians circulation is anticipated to occur along the greenway (i.e. PG&E easement) that runs north/south through the development. Therefore, a minimum 12 foot wide shared bicycle/pedestrian path should be constructed along the greenway to serve residents as well as students and recreationalists. At locations where the path crosses the proposed project's internal streets there is the increased potential for collisions due to drivers not anticipating bicycles crossing at those locations. This represents a substantial increase in traffic-related hazard due to a design feature. At locations where the path abuts some cul-de-sacs and internal loop roads, residents are not able to directly access the greenway path and must take a circuitous route to reach the path. This conflicts with adopted

policies supporting other alternate transportation systems (i.e., bike and pedestrian trails).

Vehicle queuing at the project exits is not likely to exceed eight vehicles which are roughly equivalent to 200 feet. Therefore, throat depths at the two vehicular access locations are expected to be sufficient for the traffic generated by the project.

Sight distances and emergency access were evaluated to identify potential deficiencies such as possible sight obstructions, poor intersection alignments, lack of secondary access, long cul-de-sacs, and turn radii. Based on the review the site design appears adequate and no modifications to the proposed project entryways are proposed. Project roadways and intersections will be expected to conform to city design standards.

.The City of Antioch Code of Ordinances states that for single family detached residential housing the requirement is two spaces per unit in a garage, plus one on-street space. Per the project description, two parking spaces per unit plus curbside parking will be provided, fulfilling the requirement.

ITE Parking Generation, 3rd Edition is a standard reference used by jurisdictions throughout the country and is based on actual parking demand studies at numerous locations in areas of various populations. Parking Generation states that the average peak period parking demand for single family detached housing is 1.83 vehicles per dwelling unit. The 85th percentile peak period demand is 2.14 vehicles per dwelling unit. The number of parking spaces being supplied by the proposed project is also in accordance with *Parking Generation* guidelines as well.

(13) Delay Index

The delay index (DI) is defined as the ratio between the peak congested travel time and the uncongested travel time along a roadway segment. Kimley-Horn used the Synchro model developed for this traffic study to determine the DI during all scenarios. Travel times were determined under peak congestion and also under uncongested conditions. Based on CCTA established criteria, Deer Valley Road, Lone Tree Way, and Sand Creek Road are designated as routes of regional significance (in the study area) and are to have a DI of less than 2.0.

Based on the analysis, Lone Tree Way and Deer Valley Road operate at a DI of less than 2.0 in the existing and near-term conditions. In the long-term the DI is 2.5 on Lone Tree Way in the eastbound direction during the PM peak hour, but the addition of the Aviano Adult Community project does not change the DI, therefore, it does not create a significant impact. Deer Valley Road operates at a DI of 2.1 in the southbound direction during the AM and PM peak hours, but the addition of the Aviano Adult Community project does not change the DI, therefore, it does not create a significant impact. The remaining segments of Sand Creek Road (from Deer Valley Road east to the Magnet School and from Hillcrest Avenue east to Heidorn Road) won't be complete until the

cumulative conditions and will operate at a DI of less than 2.0. T**able IV.B-7** summarizes the DI results.

Table IV.B-7: Delay Index

Scenario	Time Period		Lone Tree Way		Deer Valley Road		Sand Creek Road	
			EB	WB	NB	SB	EB	WB
Uncongested Travel Time (sec)	AM Peak		312.1	301.6	201.6	109.7	313.6	372.0
	PM Peak		314.1	323.8	189.8	105.3	347.1	373.8
Existing	AM Peak	CTT	262.6	306.1	237.0	186.8	INCOMPLETE ROADWAY	
		DI	0.8	1.0	1.2	1.7		
	PM Peak	CTT	303.6	297.2	229.1	187.3		
		DI	1.0	0.9	1.2	1.8		
Near-Term	AM Peak	CTT	263.0	395.2	241.4	196.9	INCOMPLETE ROADWAY	
		DI	0.8	1.3	1.2	1.8		
	PM Peak	CTT	283.1	360.6	235.0	188.5		
		DI	0.9	1.1	1.2	1.8		
Near-Term + Project	AM Peak	CTT	264.5	405.3	244.9	212.6	INCOMPLETE ROADWAY	
		DI	0.8	1.3	1.2	1.9		
	PM Peak	CTT	286.2	365.8	235.1	188.7		
		DI	0.9	1.1	1.2	1.8		
Cumulative	AM Peak	CTT	526.6	349.5	247.3	231.1	320.3	376.8
		DI	1.7	1.2	1.2	**2.1**	1.0	1.0
	PM Peak	CTT	789.8	616.6	237.4	217.4	368.6	389.1
		DI	**2.5**	1.9	1.3	**2.1**	1.1	1.0
Cumulative + Project	AM Peak	CTT	530.4	413.1	247.4	231.5	320.2	375
		DI	1.7	1.4	1.2	**2.1**	1.0	1.0
	PM Peak	CTT	800.5	621.7	236.4	216.6	368.7	389.4
		DI	**2.5**	1.9	1.2	**2.1**	1.1	1.0

CTT = Congested Travel Time

(14) Near-Term 2011 Project Impacts and Mitigation

The following near-term impacts were identified to be connected with the Proposed Aviano Adult Community Alternative. Tables illustrating the improvement related to proposed mitigation are included in the **Technical Appendix**.

Proposed Alternative Impact TRANS – 1: The Hillcrest Avenue/Lone Tree Way intersection will have a northbound left turn queue that will spill out of the turn pocket in the near-term regardless of the proposed Aviano Adult Community. The addition of the project traffic will increase the queue by less than three vehicles.

Proposed Alternative Mitigation Measure TRANS – 1: To mitigate the project impacts expected to occur in the near-term, one northbound through lane should be restriped to a through-shared-left turn lane. The intersection currently operates with split phasing in the north-south direction; therefore, no signal modifications would be necessary. Because the Aviano Adult Community does not trigger the impact but adds to the northbound left turn queue, the project

should be responsible for a proportionate share of the mitigation costs. The project traffic is three percent of the total intersection volume. Modifying the intersection will reduce the impact to less than significant.

Proposed Alternative Impact TRANS – 2: At locations where the greenway path crosses the proposed project's internal streets there is the increased potential for collisions due to drivers not anticipating bicycles crossing at those locations.

Proposed Alternative Mitigation Measure TRANS – 2: To mitigate the project impacts expected to occur in the near-term, lighted crosswalks and flashing traffic signs are recommended to increase driver awareness of the crossing, slow traffic and thereby increase safety.

Proposed Alternative Impact TRANS – 3: At locations where the greenway path abuts some cul-de-sacs and internal loop roads, residents are not able to directly access the greenway path and must take a circuitous route. This is inconsistent with general plan policies.

Proposed Alternative Mitigation Measure TRANS – 3: To mitigate the project impacts expected to occur in the near-term, direct access from the cul-de-sacs and loop streets should be provided to the path in harmony with the general plan policy to remove barriers for safe and convenient movement of pedestrians.

(15) Long-Term 2025 Project Impacts and Mitigation

The following long-term impacts were identified to be connected with the Proposed Aviano Adult Community Alternative. Tables illustrating the improvement related to proposed mitigation are included in the **Technical Appendix**.

Proposed Alternative Impact TRANS – 4: The Hillcrest Avenue/Lone Tree Way intersection will operate below an acceptable level of service in 2025 regardless of the Proposed Adult Community. The addition of project traffic in the 2025 plus project condition will further exacerbate the poor operation of this intersection. In addition, the intersection will have a westbound left and northbound left turn queues that will spill out of the turn pockets in 2025 regardless of the proposed Aviano Adult Community. The addition of the project traffic will increase the westbound left turn queue by less than two vehicles and the northbound left turn queue by less than two vehicles.

Proposed Alternative Mitigation Measure TRANS – 4: To mitigate the project impacts expected to occur in the year 2025, the intersection should be modified to add a second westbound left turn lane. Because the Aviano Adult Community does not trigger the impact but adds to the intersection congestion, the project should be responsible for a proportionate share of the mitigation costs. The project traffic is one percent of the total intersection volume. Right-of-way may be

required. The northbound left turn queuing issue was resolved by Proposed Alternative Mitigation Measure TRANS – 1. Modifying the intersection will reduce the impact to less than significant.

Proposed Alternative Impact TRANS – 5: The SB SR-4 Bypass/Lone Tree Way intersection will operate below an acceptable level of service in 2025 regardless of the Proposed Adult Community. The addition of project traffic in the 2025 plus project condition will further exacerbate the poor operation of this intersection.

Proposed Alternative Mitigation Measure TRANS – 5: To mitigate the project impacts expected to occur in the year 2025, the left-shared-through lane should be restriped to an all-shared lane. Because the Aviano Adult Community does not trigger the impact but adds to the intersection congestion, the project should be responsible for a proportionate share of the mitigation costs. The project traffic is 0.1% of the total intersection volume. The proposed improvement is independent of any future plans to widen the SR-4 Bypass. Modifying the intersection will reduce the impact to less than significant.

(16) Supplemental 2030 Sand Creek Analysis

At the request of the City of Antioch, a supplemental 2030 evaluation of Sand Creek Road was conducted to determine if the roadway needs to be four lanes or six lanes in the future from Deer Valley Road to east of Hillcrest Avenue. The six lane cross section entails three lanes in each direction with left turn lanes from west of Deer Valley Road to east of Hillcrest Avenue. The four lane cross section entails two lanes in each direction with left turn lanes from west of Deer Valley Road to east of Hillcrest Avenue with the addition of a westbound right turn lane at Deer Valley Road.

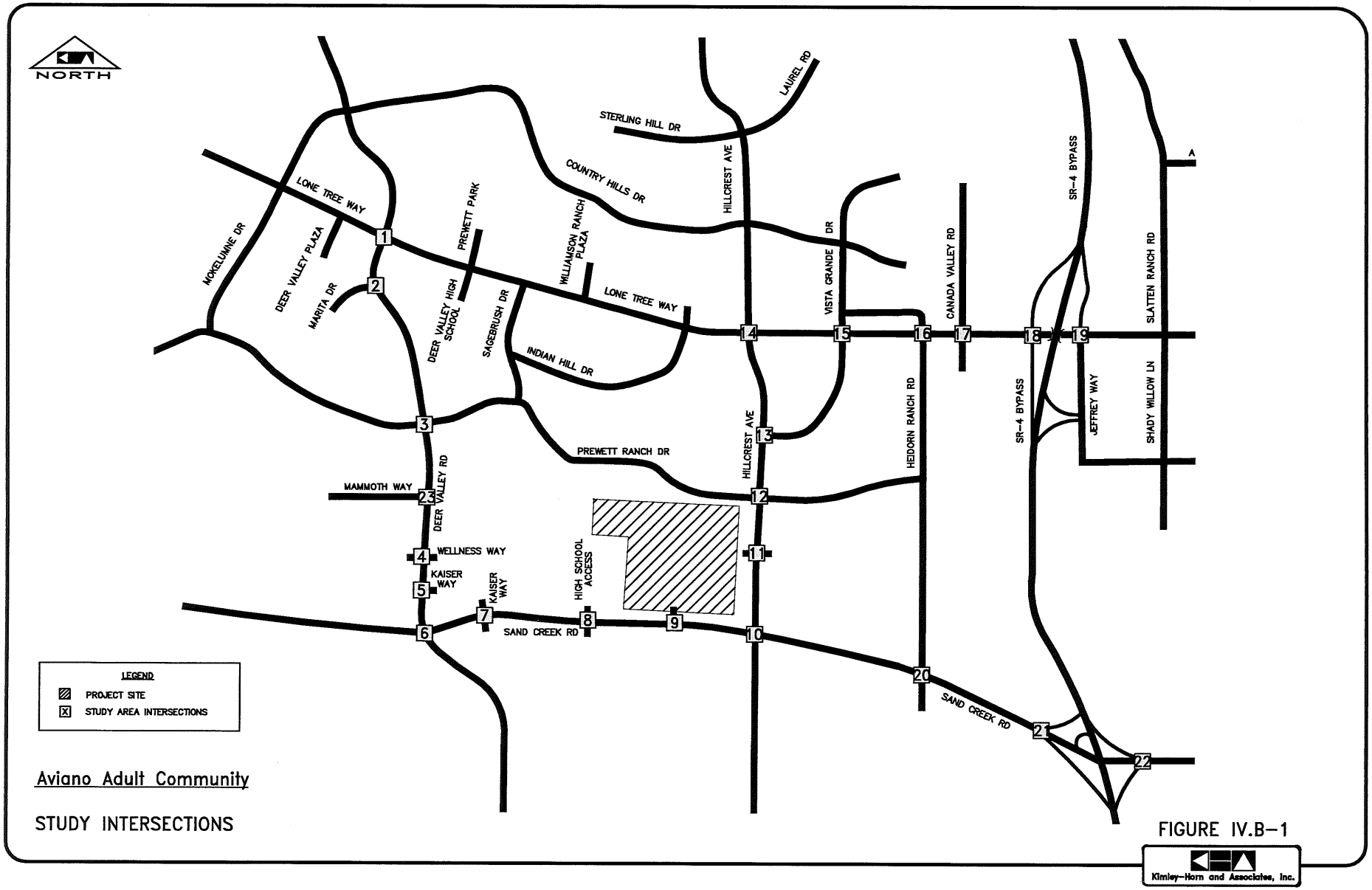
Sand Creek Road is planned to be four lanes with left turn lanes from east of Hillcrest Avenue to Heidorn Ranch Road and four lanes with left and right turn lanes from east of Heidorn Ranch Road to east of the SR-4 bypass. The General Plan Buildout Model was used to extend the current forecast to the year 2030. The forecast volumes were furnessed into intersection turning movement volumes that were analyzed in *Synchro* software, which reports level of service and intersection delay.

As shown in **Table IV.B-8**, all intersections operate at an acceptable level of service with a six lane cross section. With a four-lane cross section, all intersections operate acceptably with the exception of Deer Valley Road/Sand Creek Road.

Table IV.B-8: 2030 Sand Creek Road Level of Service Conditions

	Intersection	Criteria	4-Lane Cross Section				6-Lane Cross Section			
			AM Peak		PM Peak		AM Peak		PM Peak	
			LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
6	Deer Valley Road / Sand Creek Road	D	E	56.9	D	41.6	D	54.0	D	41.0
7	Kaiser Hospital / Sand Creek Road	D	C	23.8	C	28.1	C	24.6	C	23.8
8	PARK / Sand Creek Road	D	D	43.7	D	42.6	C	28.0	C	22.7
9	Project South Access / Sand Creek Road	D	A	3.1	A	4.7	A	2.4	A	3.7
10	Hillcrest Avenue / Sand Creek Road	D	C	27.6	D	40.3	C	27.9	D	40.0
20	Heidorn Ranch Road / Sand Creek Road	D	B	14.6	C	24.0				
21	SR-4 Bypass SB Ramps / Sand Creek Road	D	C	22.4	D	51.1				
22	SR-4 Bypass NB Ramps / Sand Creek Road	D	A	8.0	A	7.6				

TECHNICAL APPENDIX

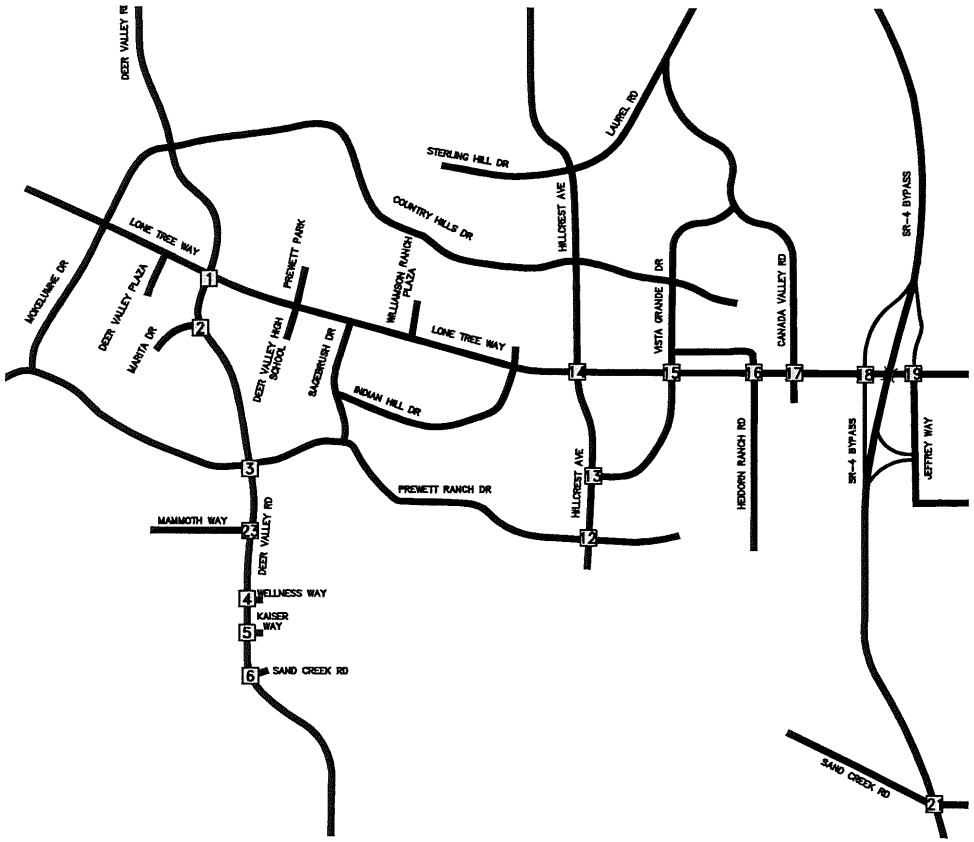


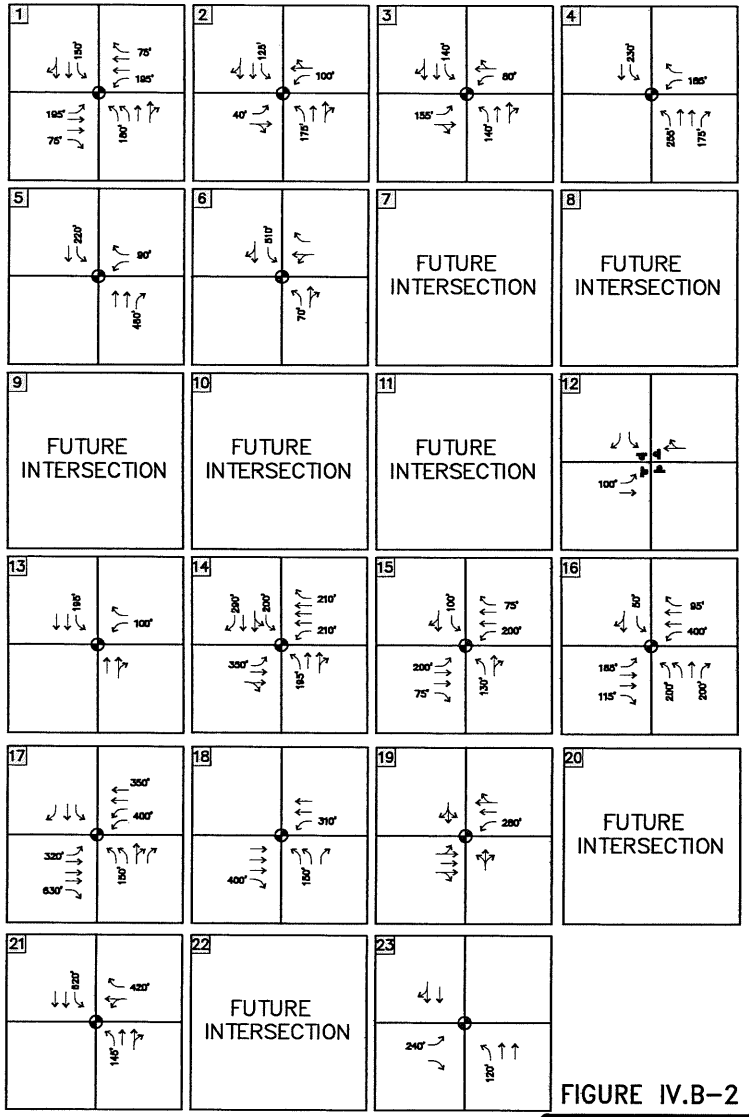
Aviano Adult Community

STUDY INTERSECTIONS

FIGURE IV.B-1

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LEGEND

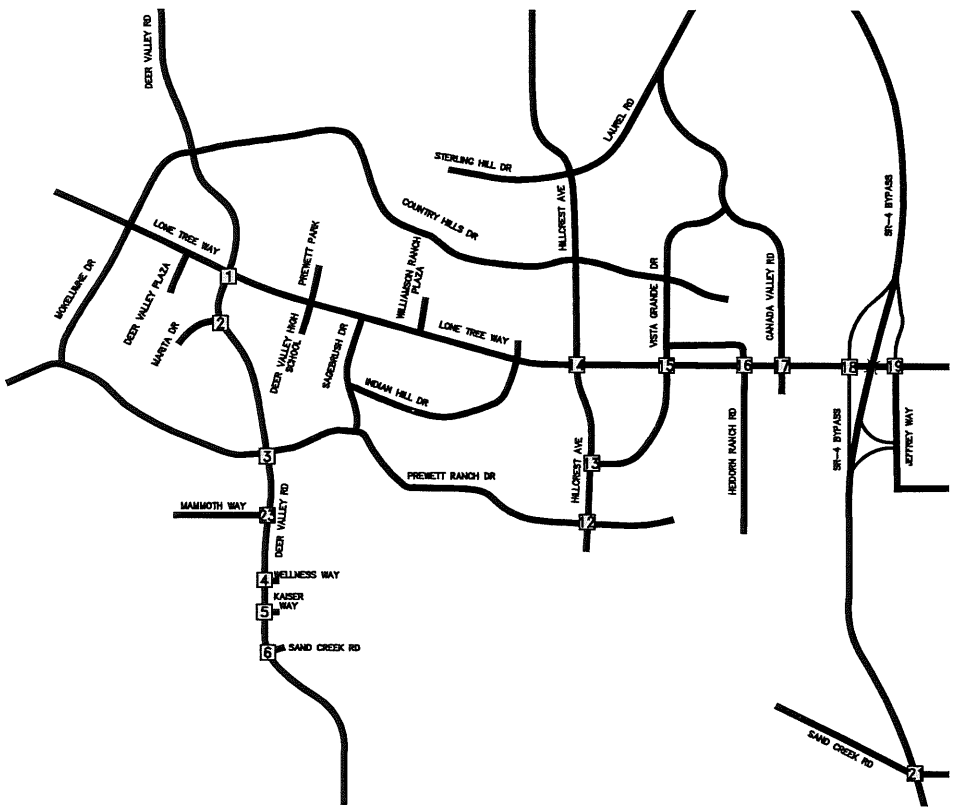
- [X] STUDY AREA INTERSECTIONS
- TRAFFIC SIGNAL
- STOP SIGN
- XX' STORAGE LENGTH

Aviano Adult Community

EXISTING LANE GEOMETRY AND TRAFFIC CONTROL

FIGURE IV.B-2

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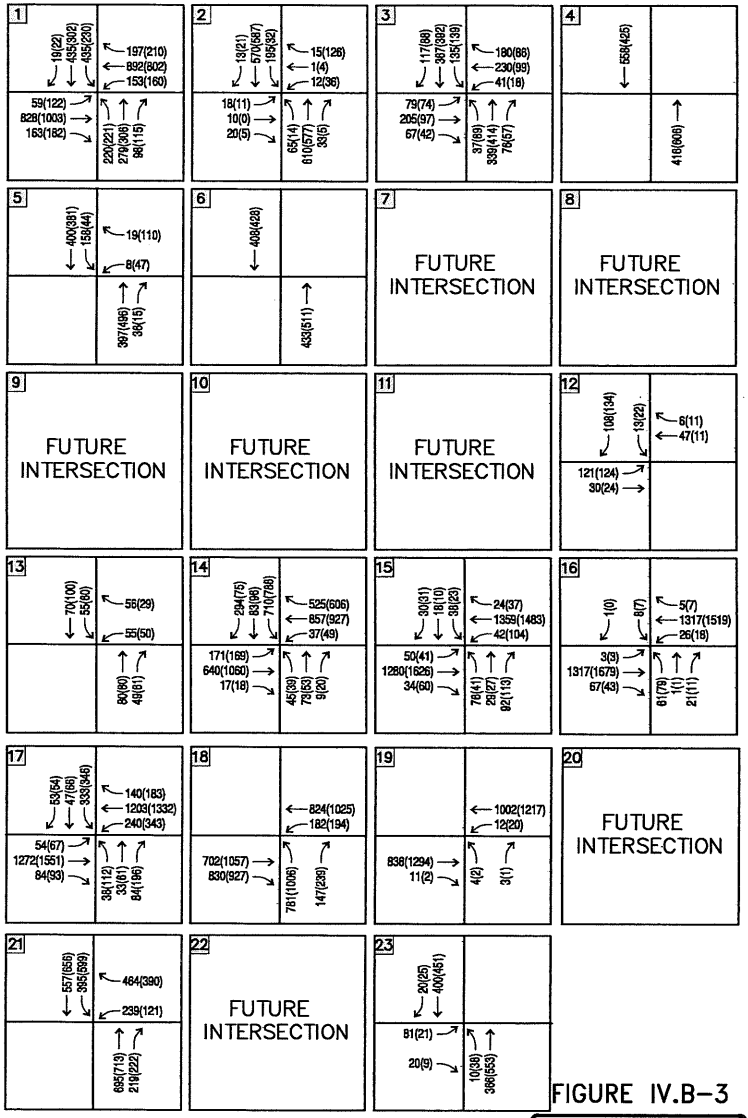




LEGEND

[X] STUDY AREA INTERSECTIONS

XX (XX) AM (PM) VOLUMES

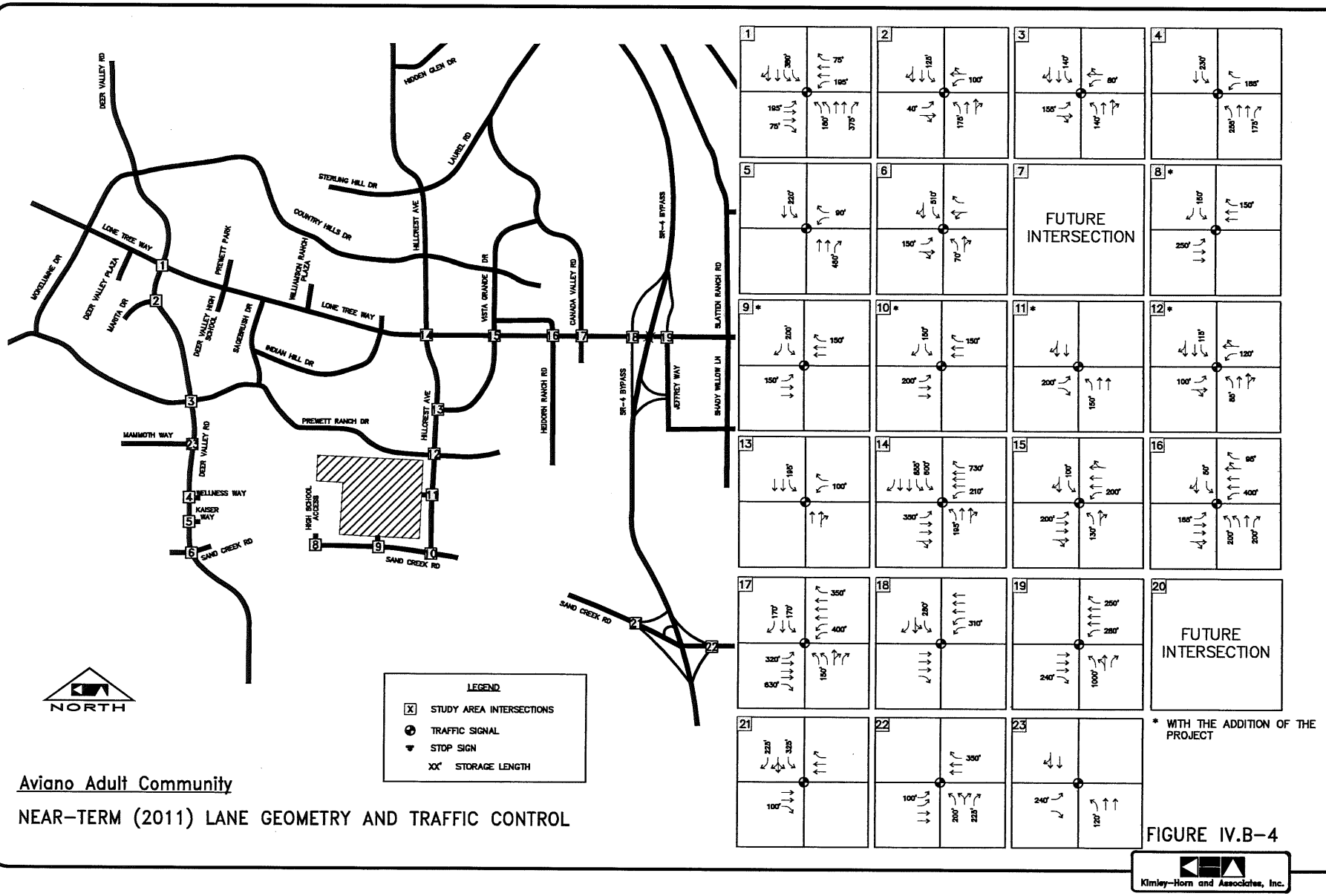


Aviano Adult Community

EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES

FIGURE IV.B-3

Kimley-Horn and Associates, Inc.

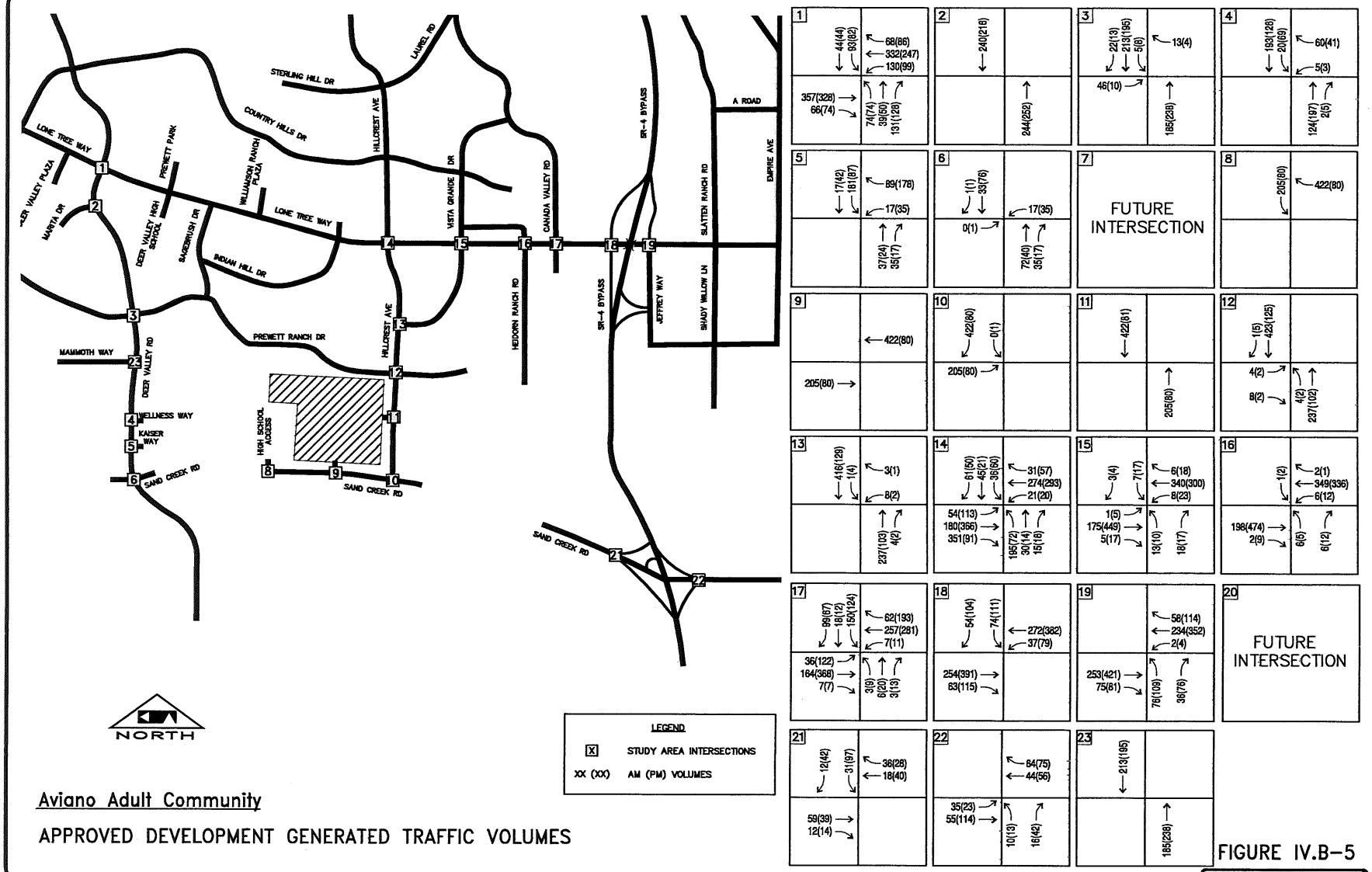


Aviano Adult Community

NEAR-TERM (2011) LANE GEOMETRY AND TRAFFIC CONTROL

FIGURE IV.B-4

Kimley-Horn and Associates, Inc.

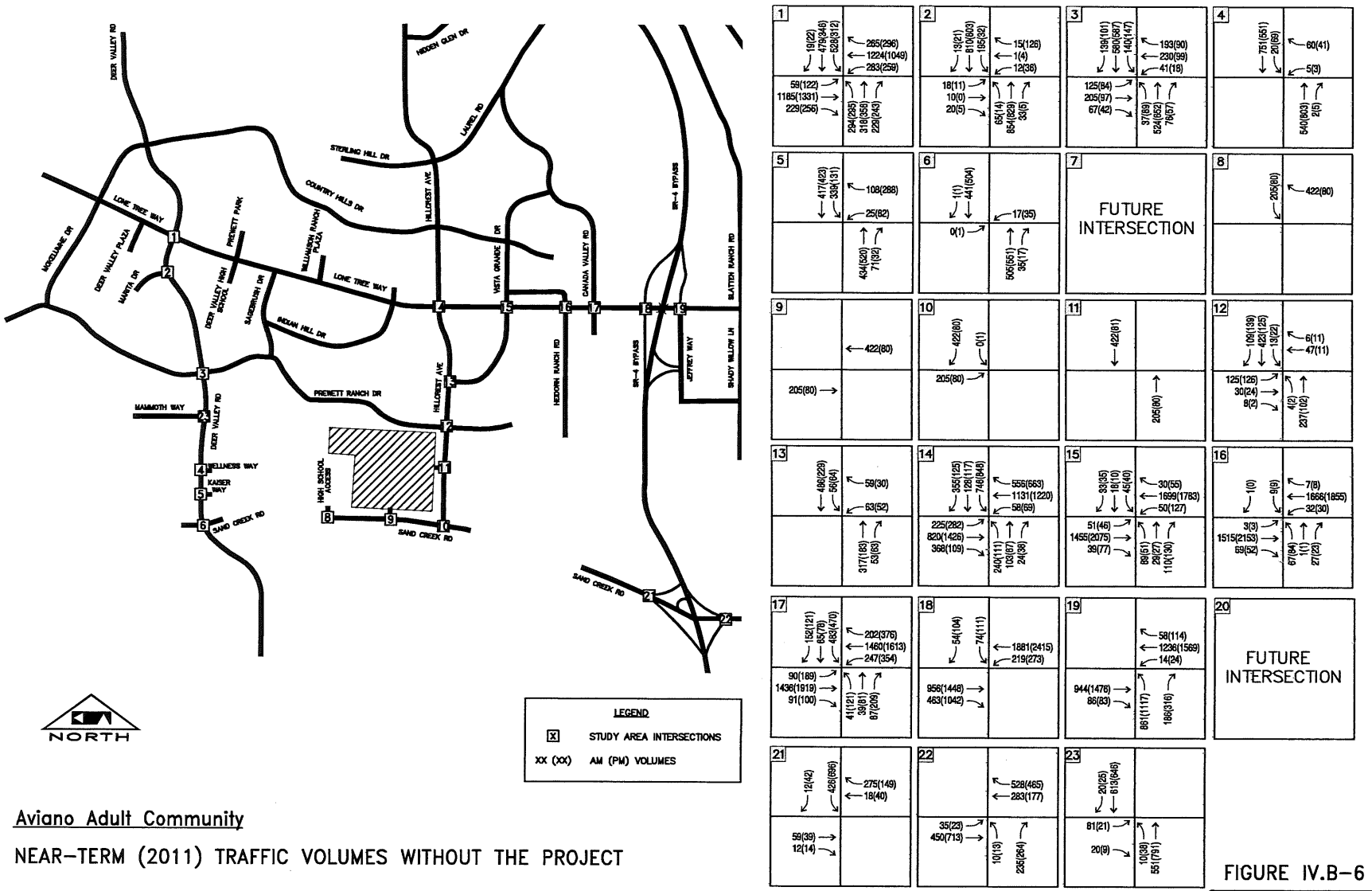


Aviano Adult Community

APPROVED DEVELOPMENT GENERATED TRAFFIC VOLUMES

FIGURE IV.B-5

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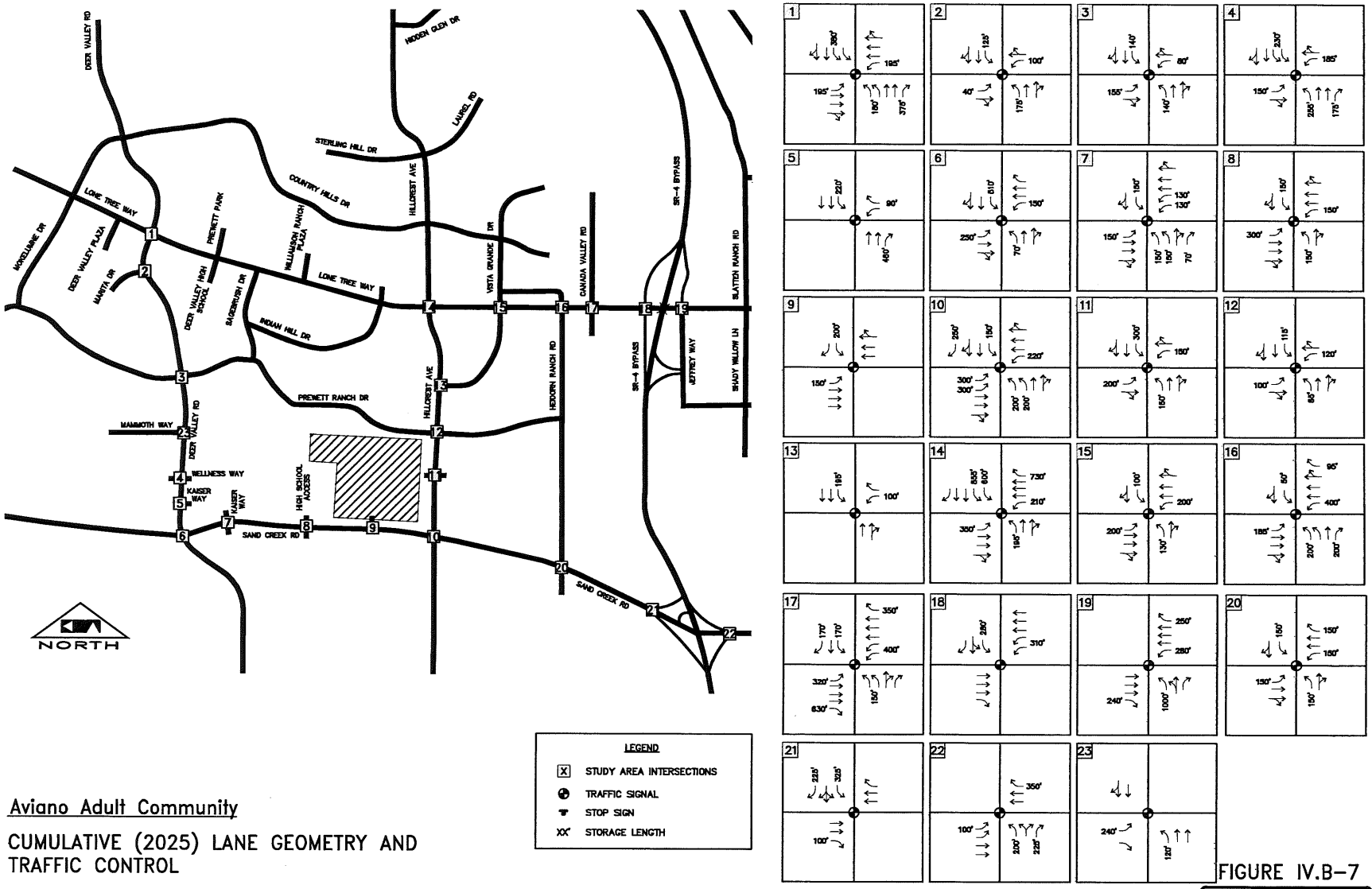


Aviano Adult Community

NEAR-TERM (2011) TRAFFIC VOLUMES WITHOUT THE PROJECT

FIGURE IV.B-6

Kimley-Horn and Associates, Inc.

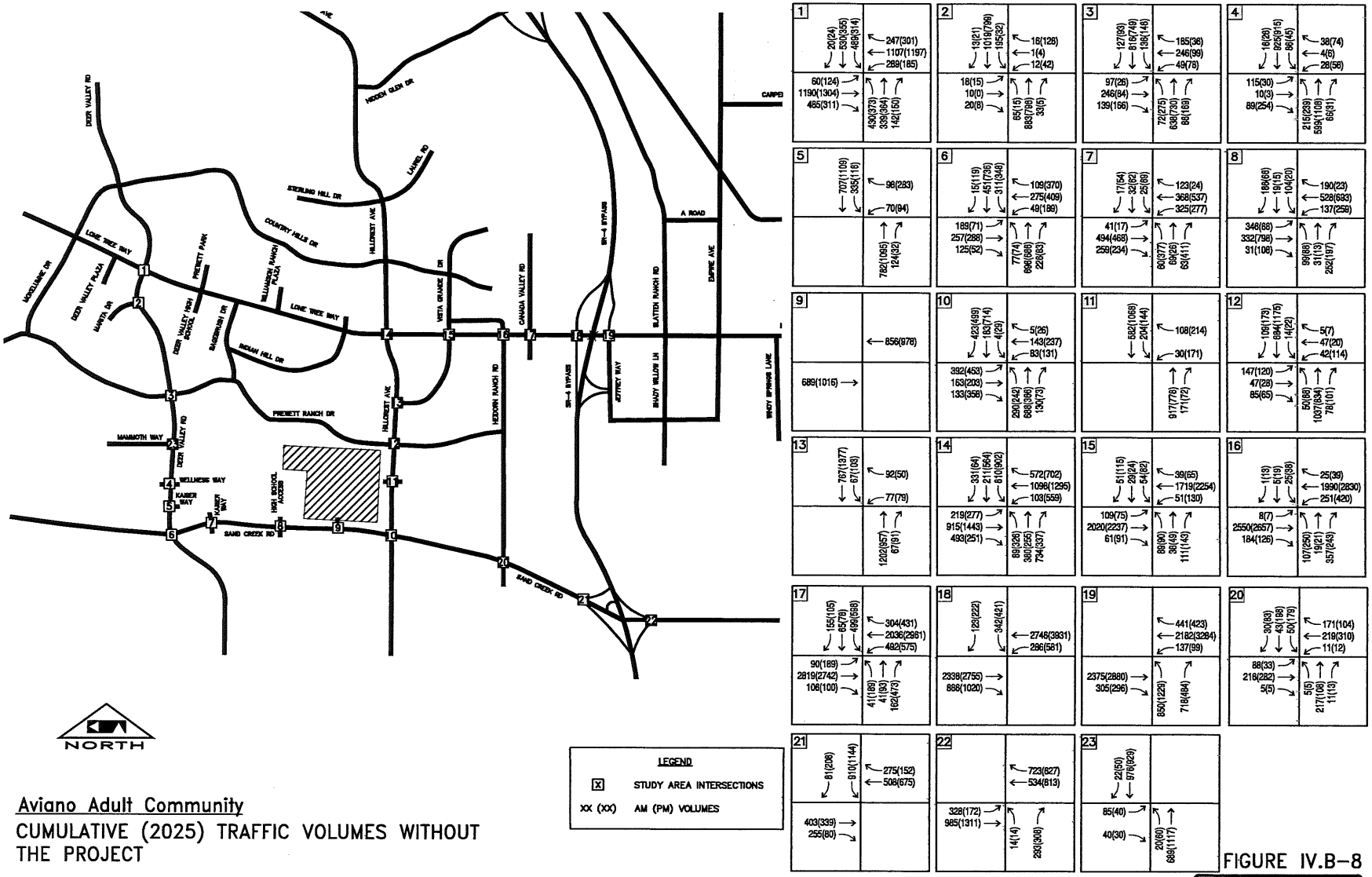


Aviano Adult Community

CUMULATIVE (2025) LANE GEOMETRY AND TRAFFIC CONTROL

FIGURE IV.B-7

Kimley-Horn and Associates, Inc.

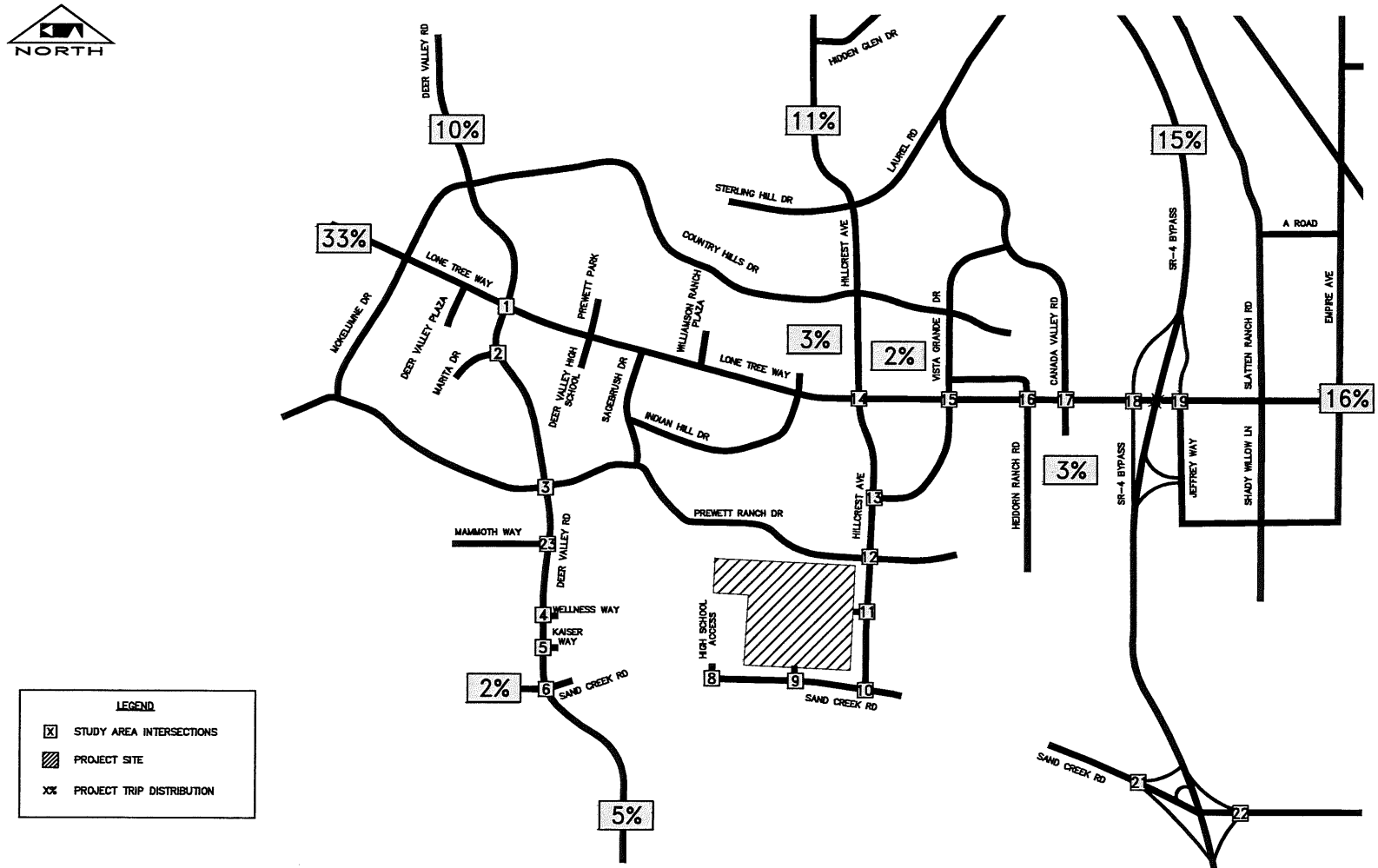


Aviano Adult Community

CUMULATIVE (2025) TRAFFIC VOLUMES WITHOUT THE PROJECT

FIGURE IV.B-8

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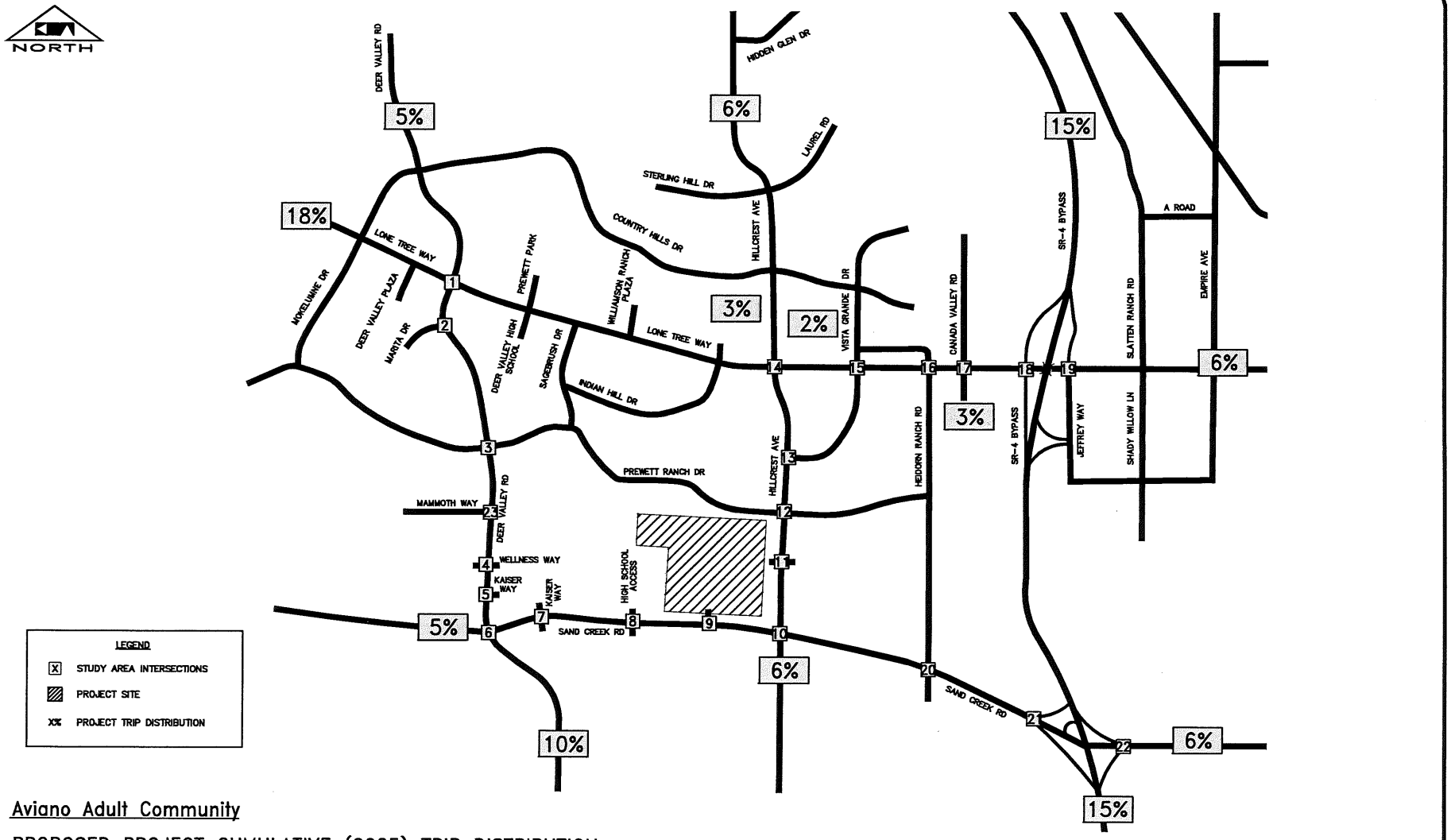


Aviano Adult Community

PROPOSED PROJECT NEAR-TERM (2011) TRIP DISTRIBUTION

FIGURE IV.B-9

Kimley-Horn and Associates, Inc.

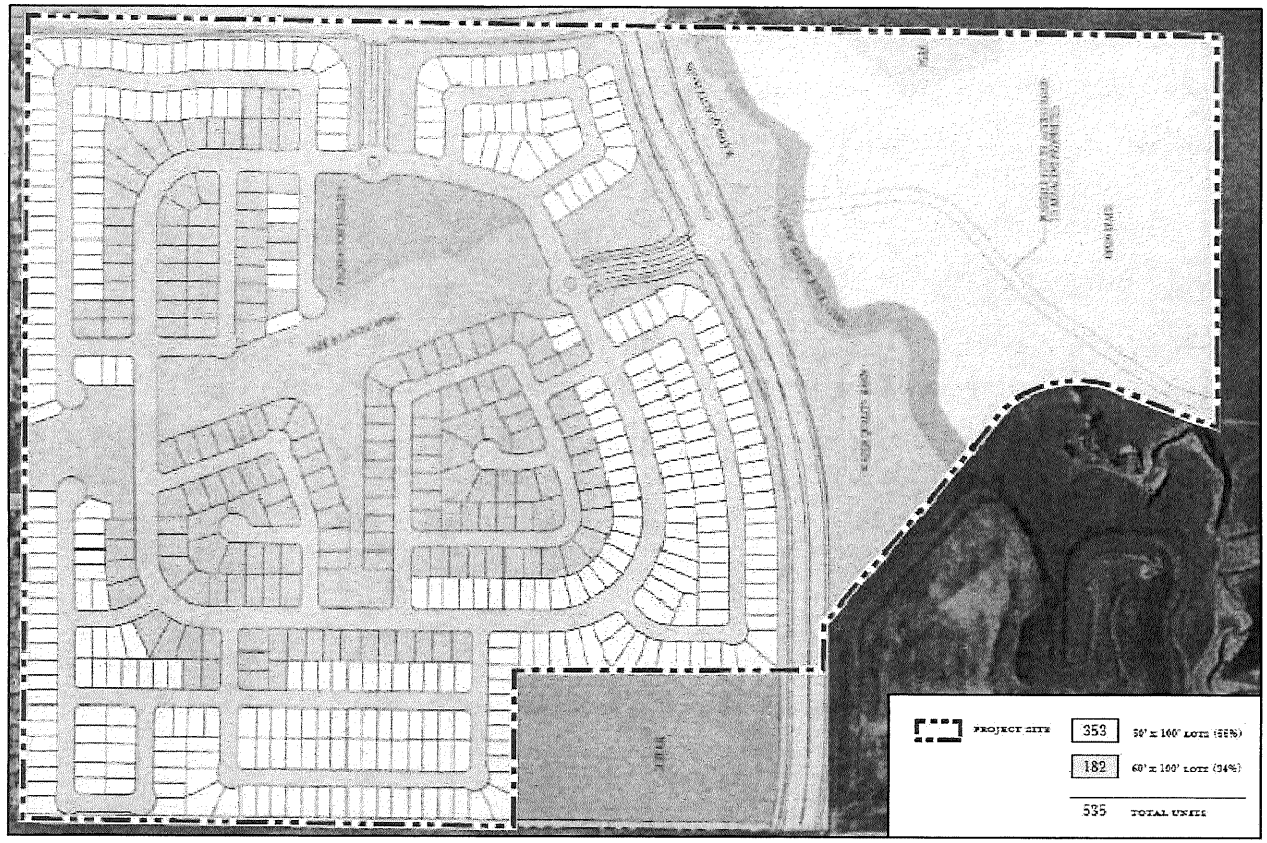


Aviano Adult Community

PROPOSED PROJECT CUMULATIVE (2025) TRIP DISTRIBUTION

FIGURE IV.B-10

Kimley-Horn and Associates, Inc.

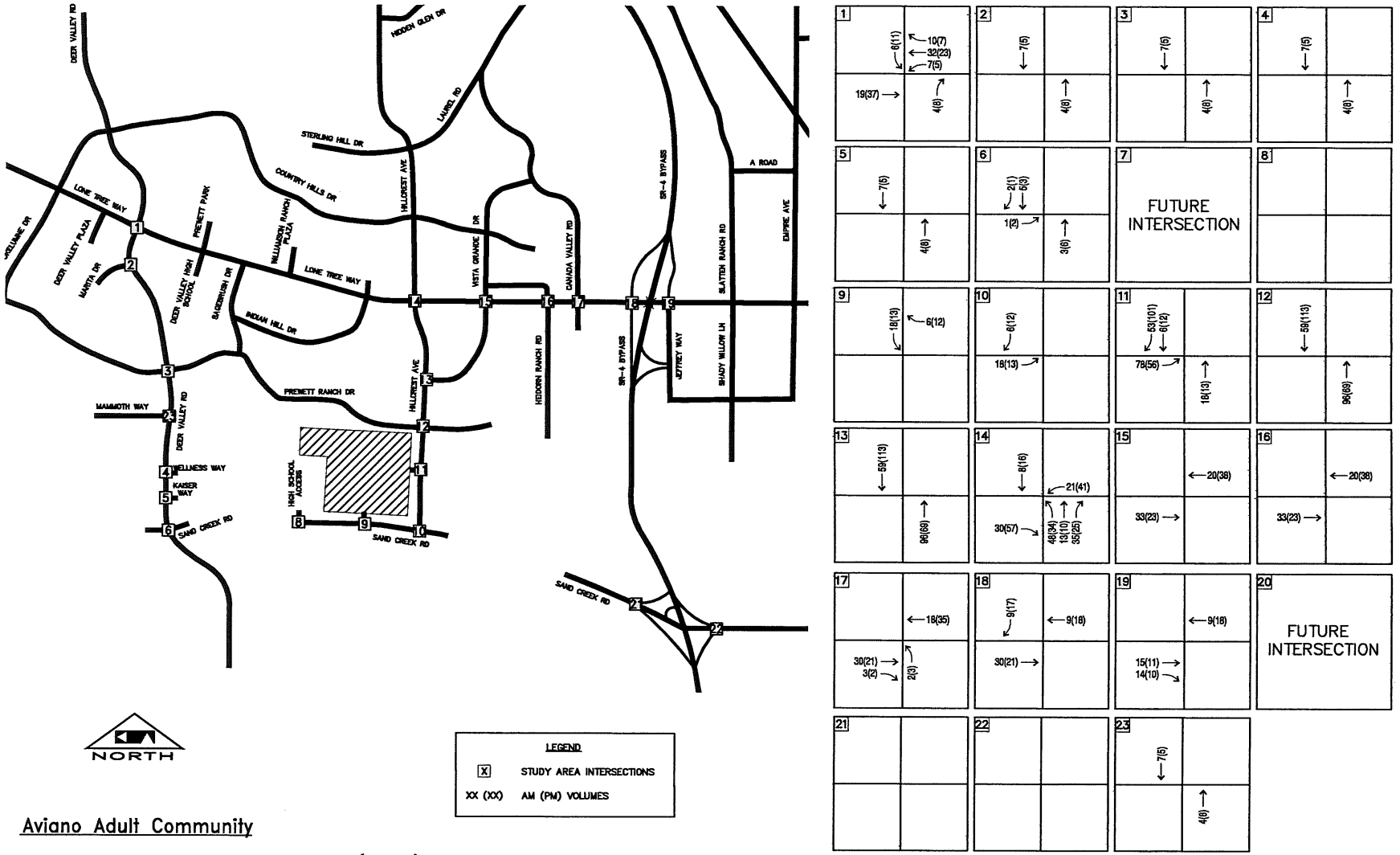


Aviano Adult Community

PROPOSED PROJECT SITE PLAN

FIGURE IV.B-11

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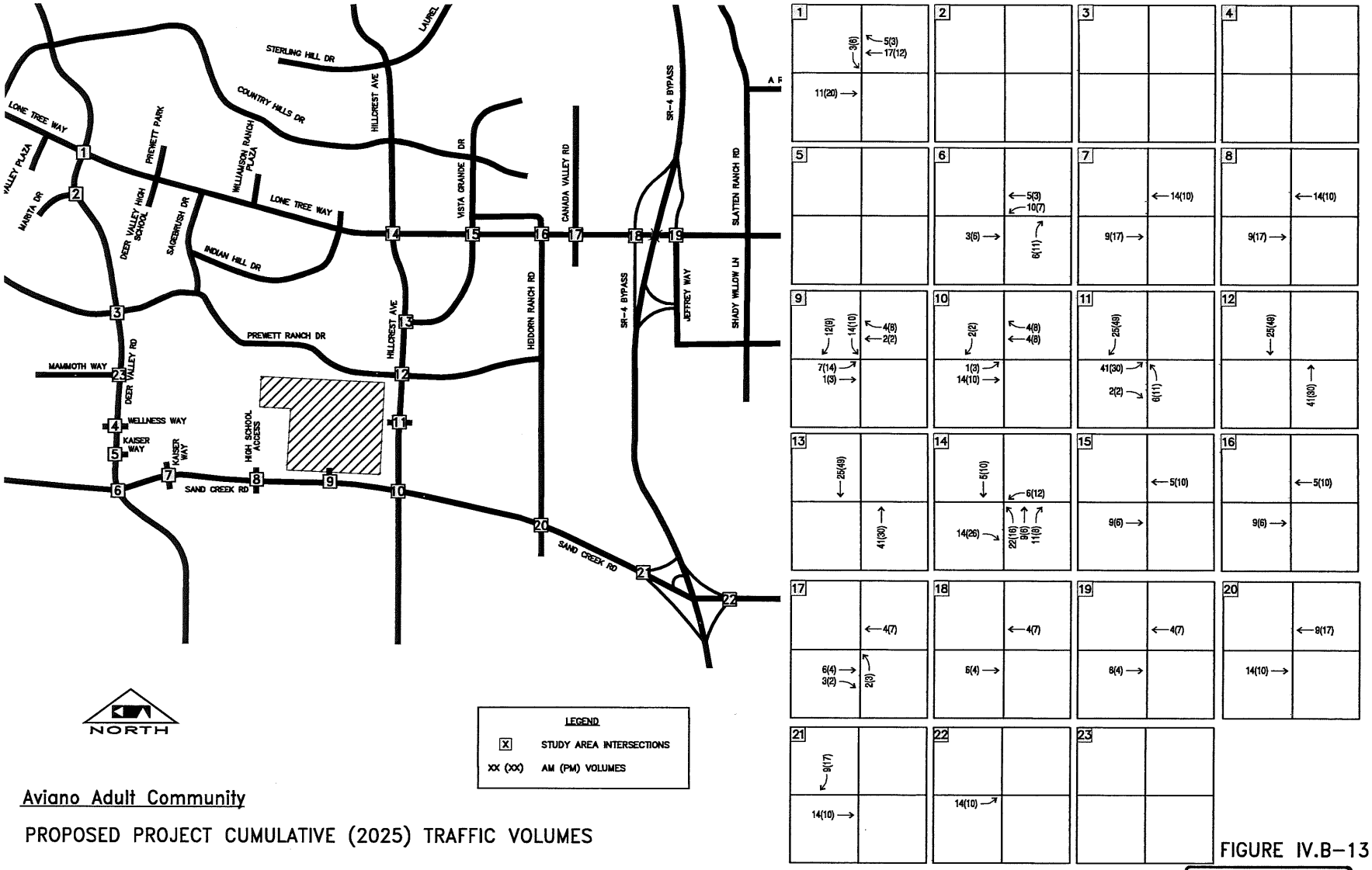


Aviano Adult Community

PROPOSED PROJECT NEAR-TERM (2011) TRAFFIC VOLUMES

FIGURE IV.B-12

Kimley-Horn and Associates, Inc.

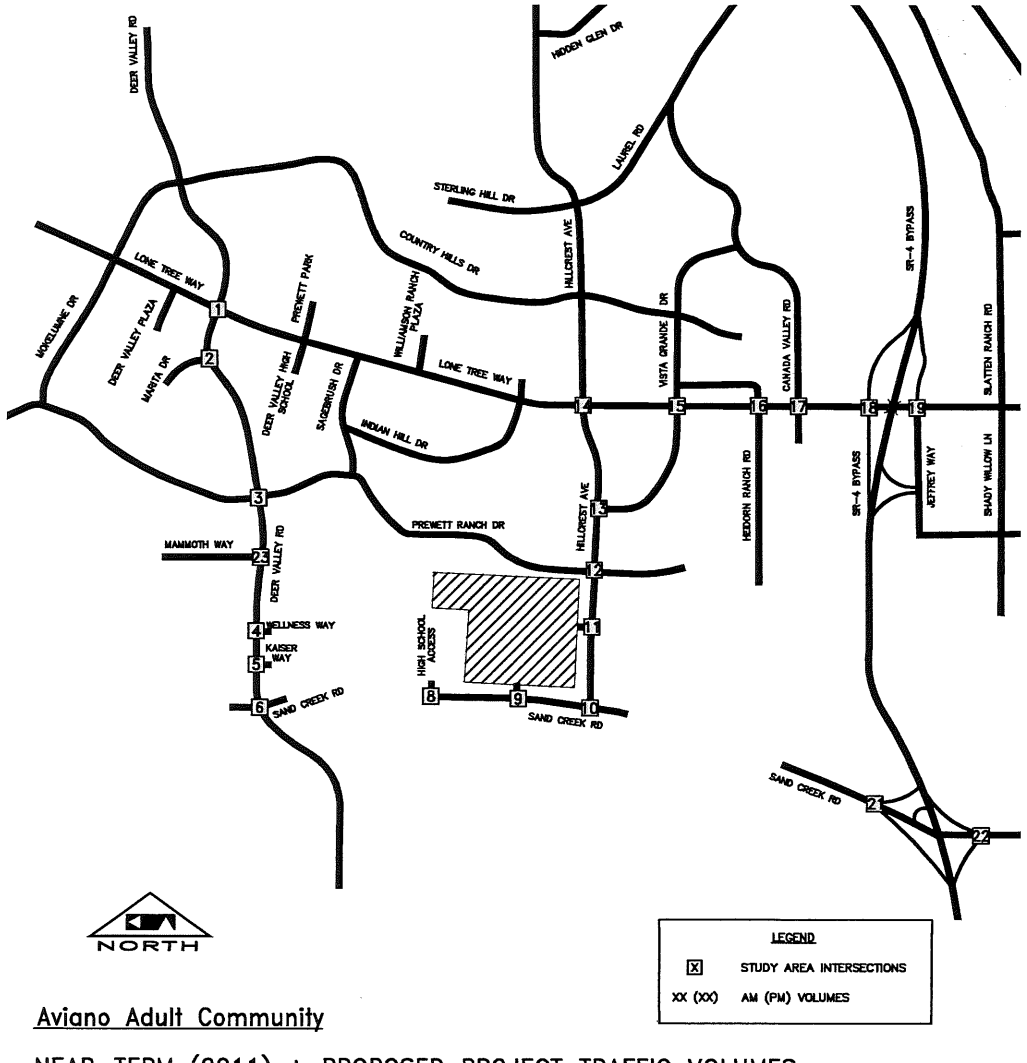


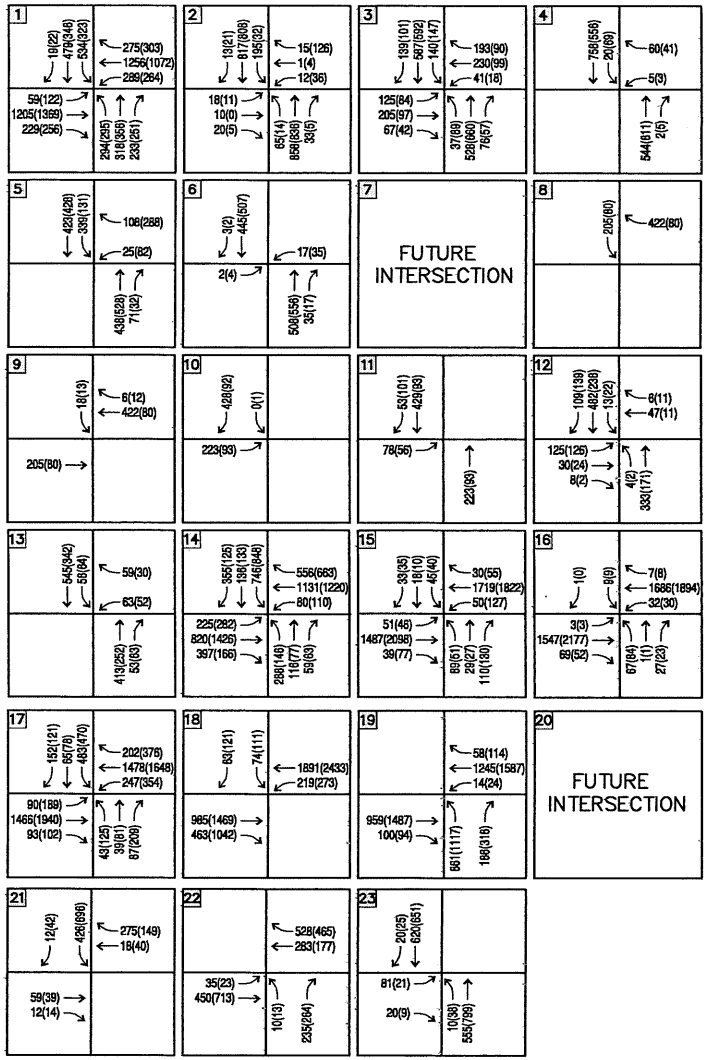
Aviano Adult Community

PROPOSED PROJECT CUMULATIVE (2025) TRAFFIC VOLUMES

FIGURE IV.B-13

Kimley-Horn and Associates, Inc.



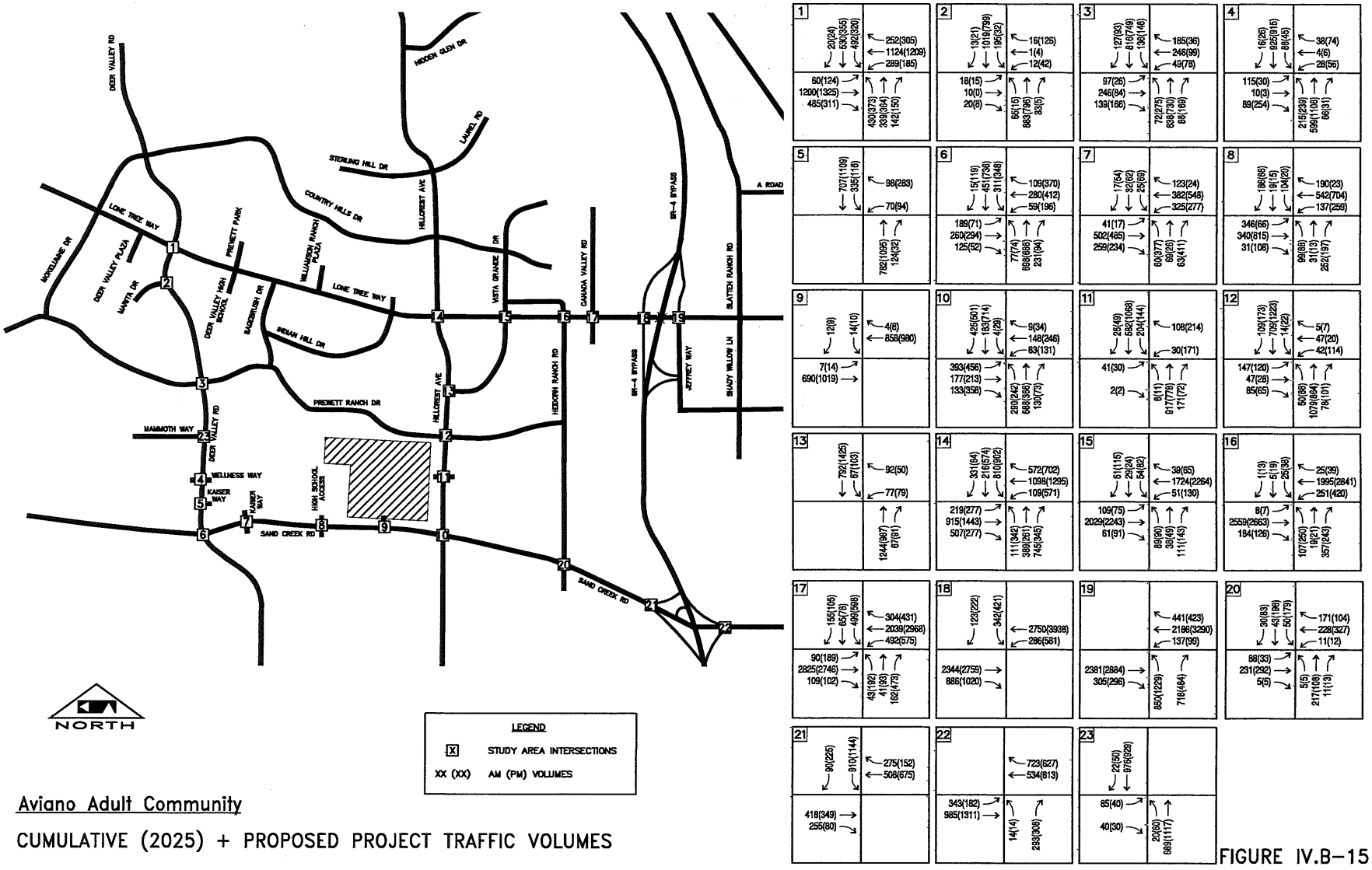


Aviano Adult Community

NEAR-TERM (2011) + PROPOSED PROJECT TRAFFIC VOLUMES

FIGURE IV.B-14

Kimley-Horn and Associates, Inc.



Aviano Adult Community

CUMULATIVE (2025) + PROPOSED PROJECT TRAFFIC VOLUMES

FIGURE IV.B-15

Kimley-Horn and Associates, Inc.

TURNING MOVEMENT VOLUMES

WILTEC

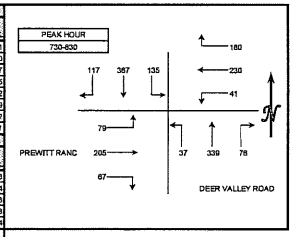
Phone: (925) 706-9911 Fax: (925) 706-9914

INTERSECTION TURNING MOVEMENT COUNT SUMMARY

CLIENT: KIMLEY-HORN AND ASSOCIATES, INC.
PROJECT: ANTIOCH 05-06
DATE: TUESDAY MAY 23, 2006
PERIODS: 7:00 AM TO 9:00 AM AND 4:00 PM TO 6:00 PM
INTERSECTION: N/S DEER VALLEY ROAD
E/W PREWITT RANCH DRIVE

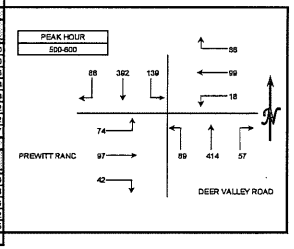
15 MIN COUNTS — 7:00 AM TO 9:00 AM

PERIOD	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTAL
700-715	3	72	10	31	9	15	2	43	7	16	15	8	231
715-730	10	72	21	35	17	12	3	99	8	23	29	11	340
730-745	14	85	28	44	35	8	19	104	10	21	44	25	437
745-800	31	96	51	49	27	5	29	71	7	10	62	27	465
800-815	46	85	37	50	75	14	17	87	3	15	56	17	482
815-830	28	101	19	37	93	14	11	97	17	21	43	10	489
830-845	17	83	41	23	24	12	9	72	15	19	34	13	367
845-900	27	77	48	29	32	6	15	87	9	14	41	26	411
HOUR TOTALS													
TIME	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTAL
700-800	58	325	116	159	88	40	53	317	32	70	150	71	1473
715-815	101	338	137	178	154	39	68	341	28	69	191	80	1724
730-830	117	367	135	180	230	41	76	339	37	67	205	79	1873
745-845	120	365	148	159	219	45	68	307	42	65	185	87	1768
800-900	116	346	145	139	224	46	52	323	44	69	174	66	1744
PHF		0.87			0.73		0.85			0.89			0.96



15 MIN COUNTS — 4:00 PM TO 6:00 PM

PERIOD	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTAL
400-415	23	110	28	28	17	8	13	104	19	11	30	19	410
415-430	25	91	28	23	22	6	10	95	20	9	22	11	380
430-445	24	106	29	26	15	2	8	95	24	11	24	24	386
445-500	21	103	25	27	17	3	15	88	21	15	24	17	374
500-515	27	99	33	31	27	4	15	114	31	7	21	25	434
515-530	25	107	33	18	19	3	12	98	19	9	26	23	392
530-545	16	95	32	16	32	4	19	112	21	11	19	15	392
545-600	20	91	41	21	21	7	11	90	16	15	31	11	377
HOUR TOTALS													
TIME	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTAL
400-500	93	410	108	104	71	19	44	380	84	46	100	71	1530
415-515	97	399	113	107	81	15	45	390	95	42	91	77	1554
430-530	97	415	120	102	78	12	48	393	95	42	95	89	1586
445-545	89	404	123	92	95	14	61	410	92	42	90	80	1592
500-600	88	392	139	88	99	18	57	414	89	42	97	74	1595
PHF		0.94			0.82		0.88			0.89			0.92



WILTEC

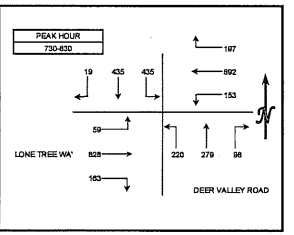
Phone: (925) 706-9911 Fax: (925) 706-9914

INTERSECTION TURNING MOVEMENT COUNT SUMMARY

CLIENT: KIMLEY-HORN AND ASSOCIATES, INC.
PROJECT: ANTIOCH 05-06
DATE: TUESDAY MAY 23, 2006
PERIODS: 7:00 AM TO 9:00 AM AND 4:00 PM TO 6:00 PM
INTERSECTION: N/S DEER VALLEY ROAD
E/W LONE TREE WAY

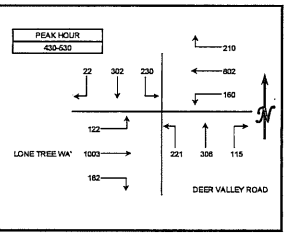
15 MIN COUNTS — 7:00 AM TO 9:00 AM

PERIOD	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTAL
700-715	3	82	39	16	192	15	2	41	40	42	102	8	582
715-730	1	82	49	19	168	21	7	63	78	30	131	8	657
730-745	2	102	128	32	229	28	15	70	55	43	203	10	915
745-800	4	112	146	78	240	32	32	88	58	41	216	11	1058
800-815	10	118	98	50	200	43	34	74	59	34	210	15	953
815-830	3	103	63	37	223	52	17	49	38	45	199	23	852
830-845	11	96	45	48	189	44	24	77	43	35	175	12	801
845-900	4	77	31	71	176	48	25	79	66	35	190	11	813
HOUR TOTALS													
TIME	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTAL
700-800	10	376	382	145	829	84	56	260	231	158	452	37	3210
715-815	17	414	421	179	837	122	88	293	260	148	760	44	3583
730-830	19	435	435	197	892	153	98	279	220	153	828	59	3779
745-845	28	431	352	213	852	171	107	288	208	155	800	61	3864
800-900	28	396	237	206	788	187	100	279	216	149	774	61	3421
PHF		0.85			0.89		0.84			0.88			0.89



15 MIN COUNTS — 4:00 PM TO 6:00 PM

PERIOD	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTAL
400-415	4	80	92	83	212	40	27	83	91	29	225	12	958
415-430	2	74	62	53	187	35	30	89	35	42	242	25	856
430-445	3	84	58	45	213	46	24	89	71	40	221	21	895
445-500	6	75	51	44	186	29	32	76	53	39	242	22	854
500-515	7	67	67	74	205	42	31	73	63	59	268	30	886
515-530	6	76	54	47	198	43	28	88	35	44	272	49	940
530-545	10	58	53	37	183	32	29	79	51	28	246	20	826
545-600	4	59	75	58	183	28	20	83	45	37	277	23	872
HOUR TOTALS													
TIME	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTAL
400-500	15	313	263	205	798	150	113	297	249	150	930	80	3563
415-515	18	300	238	219	791	152	117	287	221	180	973	96	3591
430-530	22	302	230	210	802	160	115	306	221	182	1003	122	3675
445-545	29	276	225	202	772	146	120	316	201	170	1028	121	3606
500-600	27	260	249	216	769	145	108	303	194	168	1063	122	3624
PHF		0.79			0.91			0.80			0.90		0.93



WILTEC

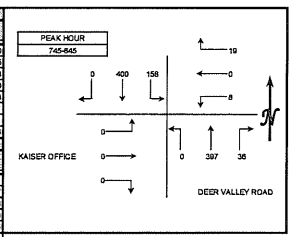
Phone: (925) 706-9911 Fax: (925) 706-9914

INTERSECTION TURNING MOVEMENT COUNT SUMMARY

CLIENT: KIMLEY-HORN AND ASSOCIATES, INC.
PROJECT: ANTIOCH 05-06
DATE: TUESDAY MAY 23, 2006
PERIODS: 7:00 AM TO 9:00 AM AND 4:00 PM TO 6:00 PM
INTERSECTION: N/S DEER VALLEY ROAD
E/W KAISER OFFICE

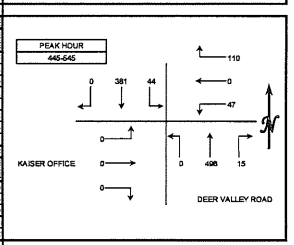
15 MIN COUNTS — 7:00 AM TO 9:00 AM

PERIOD	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTAL
700-715	0	87	3	0	0	0	2	58	0	0	0	0	150
715-730	0	97	15	0	0	0	1	72	0	0	0	0	185
730-745	0	113	7	3	0	4	4	95	0	0	0	0	226
745-800	0	121	11	5	0	2	4	107	0	0	0	0	250
800-815	0	107	18	3	0	1	1	96	0	0	0	0	226
815-830	0	94	64	5	0	2	21	105	0	0	0	0	291
830-845	0	78	85	8	0	3	10	86	0	0	0	0	251
845-900	0	61	22	11	0	3	12	69	0	0	0	0	178
HOUR TOTALS													
TIME	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTAL
700-800	0	418	36	8	0	6	11	342	0	0	0	0	821
715-815	0	438	51	11	0	7	10	370	0	0	0	0	887
730-830	0	435	100	16	0	9	30	403	0	0	0	0	993
745-845	0	400	158	19	0	8	36	397	0	0	0	0	1018
800-900	0	340	169	25	0	9	44	359	0	0	0	0	946
PHF		0.88			0.48		0.88			#DIV/0!			0.87



15 MIN COUNTS — 4:00 PM TO 6:00 PM

PERIOD	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTAL
400-415	0	88	25	18	0	8	4	94	0	0	0	0	215
415-430	0	62	26	16	0	21	7	91	0	0	0	0	223
430-445	0	78	21	18	0	13	7	93	0	0	0	0	230
445-500	0	97	19	24	0	8	8	105	0	0	0	0	262
500-515	0	92	10	35	0	16	1	117	0	0	0	0	271
515-530	0	113	6	25	0	13	4	145	0	0	0	0	306
530-545	0	79	9	26	0	10	2	128	0	0	0	0	254
545-600	0	59	6	19	0	3	0	104	0	0	0	0	191
HOUR TOTALS													
TIME	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTAL
400-500	0	305	91	76	0	48	26	384	0	0	0	0	930
415-515	0	329	76	93	0	58	23	407	0	0	0	0	986
430-530	0	380	56	102	0	50	20	461	0	0	0	0	1069
445-545	0	381	44	110	0	47	15	496	0	0	0	0	1093
500-600	0	343	31	105	0	42	7	494	0	0	0	0	1022
PHF		0.89			0.77		0.86			#DIV/0!			0.89



WILTEC

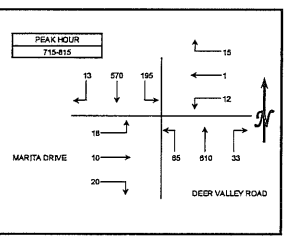
Phone: (925) 706-9911 Fax: (925) 706-9914

INTERSECTION TURNING MOVEMENT COUNT SUMMARY

CLIENT: KIMLEY-HORN AND ASSOCIATES, INC.
PROJECT: ANTIOCH 05-06
DATE: TUESDAY MAY 23, 2006
PERIODS: 7:00 AM TO 9:00 AM AND 4:00 PM TO 6:00 PM
INTERSECTION: N/S DEER VALLEY ROAD
E/W MARITA DRIVE

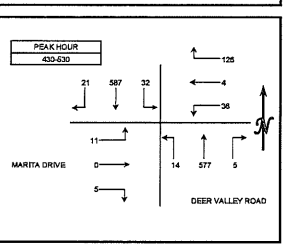
15 MIN COUNTS — 7:00 AM TO 9:00 AM

PERIOD	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTAL
700-715	6	133	34	10	0	0	12	108	3	2	2	6	316
715-730	3	123	57	8	1	9	8	122	18	1	0	1	351
730-745	3	133	44	1	0	3	3	148	10	0	1	8	354
745-800	6	163	60	2	0	0	12	179	24	9	9	8	472
800-815	1	151	34	4	0	0	10	161	13	10	6	0	390
815-830	5	135	32	4	0	1	8	128	12	2	0	0	323
830-845	6	144	27	5	0	0	8	144	10	3	2	4	353
845-900	2	149	25	9	0	0	4	168	15	3	1	6	382
HOUR TOTALS													
TIME	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTAL
700-800	18	552	195	21	1	12	35	557	55	12	12	23	1493
715-815	13	570	195	15	1	12	33	610	65	20	10	18	1562
730-830	15	582	170	11	0	4	31	614	59	21	10	17	1534
745-845	18	593	153	15	0	1	36	610	59	24	11	13	1533
800-900	14	579	118	22	0	1	28	599	50	16	3	11	1443
PHF		0.85			0.39		0.82			0.48			0.83



15 MIN COUNTS — 4:00 PM TO 6:00 PM

PERIOD	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTAL
400-415	9	146	18	24	0	4	4	145	5	2	0	4	361
415-430	7	126	16	18	0	2	5	114	2	0	0	1	289
430-445	6	138	6	38	0	10	1	138	6	2	0	7	346
445-500	1	178	4	31	2	12	3	148	1	1	0	1	380
500-515	3	146	5	47	1	9	1	144	1	2	0	2	361
515-530	11	129	15	12	1	5	0	149	6	0	0	1	329
530-545	8	119	8	9	0	3	1	138	11	1	0	2	348
545-600	11	138	8	12	0	7	0	159	18	3	0	6	363
HOUR TOTALS													
TIME	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTAL
400-500	23	584	46	107	2	28	13	543	14	5	0	13	1378
415-515	17	584	33	130	3	33	10	542	10	5	0	11	1378
430-530	21	587	32	126	4	36	5	577	14	5	0	11	1418
445-545	21	570	32	99	4	29	5	629	19	4	0	8	1418
500-600	31	533	36	80	2	24	2	640	36	6	0	11	1401
PHF		0.88			0.73		0.75			0.44			0.93



WILTEC

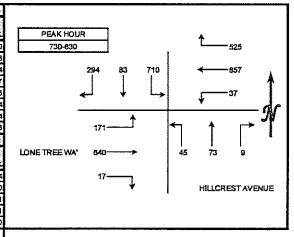
Phone: (925) 706-9911 Fax: (925) 706-9914

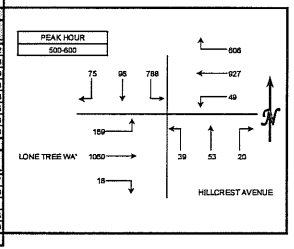
INTERSECTION TURNING MOVEMENT COUNT SUMMARY

CLIENT: KIMLEY-HORN AND ASSOCIATES, INC.
PROJECT: ANTIOCH 05-06
DATE: WEDNESDAY MAY 24, 2006
PERIODS: 7:00 AM TO 9:00 AM AND 4:00 PM TO 6:00 PM
INTERSECTION: N/S HILLCREST AVENUE
E/W LONE TREE WAY

15 MIN COUNTS	7:00 AM TO 9:00 AM												
PERIOD	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTAL
700-715	15	7	139	118	175	6	1	20	8	2	95	14	600
715-730	30	9	119	114	191	12	2	14	8	1	112	11	623
730-745	70	13	173	127	212	8	1	24	9	3	134	30	804
745-800	94	27	170	138	213	10	2	20	12	6	160	65	917
800-815	72	19	193	138	223	5	5	18	14	4	182	53	926
815-830	58	24	174	122	209	14	1	11	10	4	154	23	814
830-845	55	17	152	118	217	15	1	9	5	7	157	41	794
845-900	80	9	161	116	194	8	3	11	5	3	130	46	746
HOUR TOTALS:													
TIME	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTAL
700-800	209	56	601	497	791	36	6	78	37	12	501	120	2944
715-815	266	68	655	517	839	35	10	76	43	14	588	159	3270
730-830	294	83	710	525	857	37	9	73	45	17	640	171	3461
745-845	279	87	689	516	862	44	9	58	41	21	663	182	3451
800-900	245	69	680	494	843	42	10	49	34	18	633	163	3280
PHF		0.93			0.97			0.86			0.97		0.93

15 MIN COUNTS	4:00 PM TO 6:00 PM												
PERIOD	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTAL
400-415	25	23	178	135	223	2	2	5	3	5	170	32	802
415-430	21	10	174	125	197	2	7	9	5	5	201	37	793
430-445	32	22	183	151	226	7	5	12	7	4	236	34	919
445-500	28	22	168	137	223	12	5	10	7	5	253	33	903
500-515	29	25	208	178	258	16	2	17	18	5	271	47	1074
515-530	21	18	185	130	230	7	4	13	8	8	253	40	915
530-545	9	23	177	145	228	14	6	10	6	3	260	32	913
545-600	16	30	218	153	211	12	5	13	9	2	276	50	988
HOUR TOTALS:													
TIME	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTAL
400-500	106	77	701	548	869	23	19	36	22	19	860	136	3417
415-515	110	78	733	591	904	37	19	48	37	19	961	151	3689
430-530	110	87	744	596	837	42	16	52	38	22	1013	154	3811
445-545	87	88	738	560	939	49	17	50	37	21	1037	152	3835
500-600	75	96	788	606	927	49	20	53	39	18	1060	169	3900
PHF		0.91			0.86			0.76			0.96		0.91





WILTEC

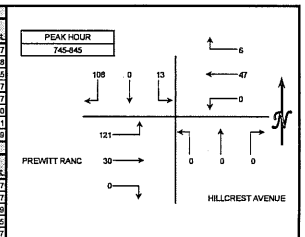
Phone: (925) 706-9911 Fax: (925) 706-9914

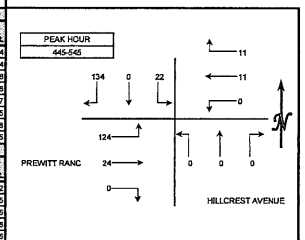
INTERSECTION TURNING MOVEMENT COUNT SUMMARY

CLIENT: KIMLEY-HORN AND ASSOCIATES, INC.
PROJECT: ANTIOCH 05-06
DATE: TUESDAY MAY 23, 2006
PERIODS: 7:00 AM TO 9:00 AM AND 4:00 PM TO 6:00 PM
INTERSECTION: N/S HILLCREST AVENUE
E/W PREWITT RANCH DRIVE

15 MIN COUNTS	7:00 AM TO 9:00 AM												
PERIOD	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTAL
700-715	9	0	1	1	2	0	0	0	0	0	1	13	27
715-730	10	0	1	1	4	2	0	0	0	0	0	21	38
730-745	19	0	2	5	7	0	0	0	0	0	2	20	55
745-800	29	0	0	0	15	0	0	0	0	0	8	35	87
800-815	30	0	8	4	24	0	0	0	0	0	0	33	97
815-830	33	0	4	1	4	0	0	0	0	0	12	26	80
830-845	16	0	3	1	4	0	0	0	0	0	10	27	61
845-900	13	0	3	1	5	0	0	0	0	0	4	23	49
HOUR TOTALS:													
TIME	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTAL
700-800	67	0	4	10	28	0	0	0	0	0	11	89	207
715-815	88	0	9	13	48	0	0	0	0	0	10	109	277
730-830	111	0	12	10	50	0	0	0	0	0	22	114	319
745-845	108	0	13	6	47	0	0	0	0	0	30	121	325
800-900	92	0	18	7	37	0	0	0	0	0	26	109	287
PHF		0.82			0.47			#DIV/0!			0.88		0.84

15 MIN COUNTS	4:00 PM TO 6:00 PM												
PERIOD	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTAL
400-415	13	0	3	3	2	0	0	0	0	0	2	11	34
415-430	28	0	1	2	4	0	0	0	0	0	3	16	54
430-445	31	0	3	1	4	0	0	0	0	0	4	25	68
445-500	37	0	3	2	3	0	0	0	0	0	7	34	86
500-515	35	0	6	4	3	0	0	0	0	0	5	43	97
515-530	20	0	4	2	3	0	0	0	0	0	4	22	55
530-545	42	0	9	3	2	0	0	0	0	0	7	25	88
545-600	38	0	1	2	2	0	0	0	0	0	4	39	86
HOUR TOTALS:													
TIME	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTAL
400-500	109	0	10	8	13	0	0	0	0	0	16	86	242
415-515	131	0	13	9	14	0	0	0	0	0	20	118	305
430-530	123	0	16	9	13	0	0	0	0	0	21	124	306
445-545	134	0	22	11	11	0	0	0	0	0	24	124	326
500-600	135	0	20	11	10	0	0	0	0	0	21	129	326
PHF		0.76			0.79			#DIV/0!			0.75		0.84





WILTEC

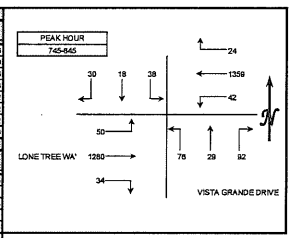
Phone: (925) 706-9911 Fax: (925) 706-9914

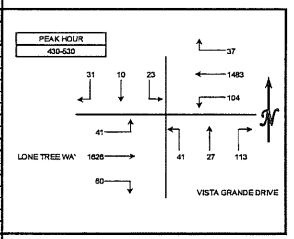
INTERSECTION TURNING MOVEMENT COUNT SUMMARY

CLIENT: KIMLEY-HORN AND ASSOCIATES, INC.
PROJECT: ANTIOCH 05-06
DATE: WEDNESDAY MAY 24, 2006
PERIODS: 7:00 AM TO 9:00 AM AND 4:00 PM TO 6:00 PM
INTERSECTION: N/S VISTA GRANDE DRIVE
E/W LONE TREE WAY

15 MIN COUNTS	7:00 AM TO 9:00 AM												
PERIOD	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTAL
700-715	4	2	5	3	247	7	19	1	9	3	225	1	526
715-730	10	0	5	7	272	8	26	3	12	4	308	4	659
730-745	19	3	8	8	288	6	20	1	14	2	294	12	864
745-800	13	6	16	12	328	13	29	12	25	6	315	21	796
800-815	8	10	12	3	324	12	17	11	22	8	320	14	762
815-830	3	0	7	4	344	10	19	2	18	5	342	8	762
830-845	6	2	3	5	383	7	27	4	11	14	303	7	752
845-900	4	3	2	2	328	7	22	3	17	4	270	6	668
HOUR TOTALS:													
TIME	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTAL
700-800	37	11	34	28	1135	34	94	17	80	15	1142	38	2645
715-815	41	19	41	28	1212	39	92	27	73	21	1237	51	2881
730-830	34	19	43	25	1284	41	85	28	79	22	1271	55	2984
745-845	30	16	38	24	1359	42	92	29	76	34	1280	50	3072
800-900	21	15	24	14	1359	36	85	20	68	32	1235	35	2944
PHF		0.81			0.95			0.74			0.96		0.96

15 MIN COUNTS	4:00 PM TO 6:00 PM												
PERIOD	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTAL
400-415	8	5	2	8	355	28	21	7	15	19	361	10	839
415-430	2	3	4	9	365	26	19	10	14	9	390	4	855
430-445	8	2	8	7	368	35	24	5	11	17	407	10	898
445-500	2	2	5	8	350	21	34	9	10	9	390	9	849
500-515	13	3	5	9	395	21	37	3	12	19	410	8	935
515-530	10	3	7	15	370	27	18	10	8	15	419	15	917
530-545	3	1	4	10	339	29	17	12	10	22	392	6	845
545-600	5	2	2	8	317	22	15	13	9	11	381	5	788
HOUR TOTALS:													
TIME	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTAL
400-500	18	12	17	30	1438	110	98	31	50	54	1548	32	3438
415-515	23	10	20	31	1478	103	114	27	47	54	1597	30	3534
430-530	31	10	23	37	1483	104	113	27	41	60	1626	41	3596
445-545	28	8	21	40	1454	96	106	34	40	65	1611	37	3543
500-600	31	9	18	40	1421	89	97	36	39	67	1602	34	3485
PHF		0.74			0.96			0.85			0.96		0.96





WILTEC

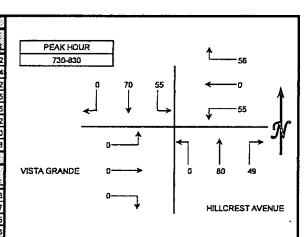
Phone: (925) 706-9911 Fax: (925) 706-9914

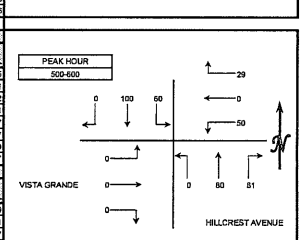
INTERSECTION TURNING MOVEMENT COUNT SUMMARY

CLIENT: KIMLEY-HORN AND ASSOCIATES, INC.
PROJECT: ANTIOCH 05-06
DATE: WEDNESDAY MAY 24, 2006
PERIODS: 7:00 AM TO 9:00 AM AND 4:00 PM TO 6:00 PM
INTERSECTION: N/S HILLCREST AVENUE
E/W VISTA GRANDE DRIVE

15 MIN COUNTS	7:00 AM TO 9:00 AM												
PERIOD	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTAL
700-715	0	9	2	9	0	4	7	11	0	0	0	0	42
715-730	0	8	2	3	0	3	8	10	0	0	0	0	34
730-745	0	12	5	9	0	10	8	18	0	0	0	0	62
745-800	0	14	12	23	0	15	19	22	0	0	0	0	105
800-815	0	23	21	13	0	19	17	23	0	0	0	0	116
815-830	0	21	17	11	0	11	5	17	0	0	0	0	82
830-845	0	13	6	2	0	5	9	15	0	0	0	0	50
845-900	0	10	12	17	0	4	8	17	0	0	0	0	68
HOUR TOTALS:													
TIME	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTAL
700-800	0	43	21	44	0	32	42	61	0	0	0	0	243
715-815	0	57	40	48	0	47	52	73	0	0	0	0	317
730-830	0	70	55	58	0	55	49	80	0	0	0	0	365
745-845	0	71	56	49	0	50	50	77	0	0	0	0	353
800-900	0	57	58	43	0	39	39	72	0	0	0	0	316
PHF		0.71			0.73			0.79			#DIV/0!		0.79

15 MIN COUNTS	4:00 PM TO 6:00 PM												
PERIOD	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTAL
400-415	0	7	13	7	0	8	5	15	0	0	0	0	55
415-430	0	18	11	8	0	11	10	13	0	0	0	0	71
430-445	0	21	14	11	0	12	12	12	0	0	0	0	82
445-500	0	31	17	11	0	8	16	18	0	0	0	0	101
500-515	0	29	10	9	0	13	18	28	0	0	0	0	107
515-530	0	12	10	3	0	9	7	16	0	0	0	0	57
530-545	0	27	18	8	0	15	15	16	0	0	0	0	99
545-600	0	32	22	12	0	13	20	18	0	0	0	0	117
HOUR TOTALS:													
TIME	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTAL
400-500	0	77	55	37	0	39	43	58	0	0	0	0	309
415-515	0	99	52	38	0	44	57	71	0	0	0	0	361
430-530	0	93	51	33	0	42	54	74	0	0	0	0	347
445-545	0	99	55	28	0	45	57	80	0	0	0	0	364
500-600	0	100	50	29	0	50	61	80	0	0	0	0	360
PHF		0.74			0.79			0.75			#DIV/0!		0.81





WILTEC

Phone: (925) 706-9911 Fax: (925) 706-9914

INTERSECTION TURNING MOVEMENT COUNT SUMMARY

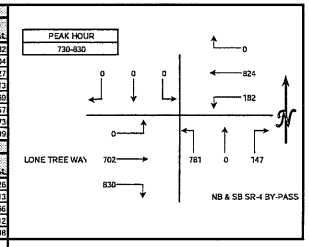
CLIENT: KIMLEY-HORN AND ASSOCIATES, INC.
PROJECT: ANTIOCH 05-05
DATE: WEDNESDAY MAY 24, 2006
PERIODS: 7:00 AM TO 9:00 AM AND 4:00 PM TO 6:00 PM
INTERSECTION: N/S NB & SB SR-4 BY-PASS
E/W LONE TREE WAY

15 MIN COUNTS: 7:00 AM TO 9:00 AM

PERIOD	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTAL
700-715	0	0	0	0	132	42	12	0	121	171	104	0	582
715-730	0	0	0	0	141	29	20	0	180	212	122	0	704
730-745	0	0	0	0	183	46	23	0	201	211	163	0	827
745-800	0	0	0	0	206	43	43	0	188	227	206	0	913
800-815	0	0	0	0	206	42	46	0	181	205	189	0	869
815-830	0	0	0	0	229	51	35	0	211	187	144	0	857
830-845	0	0	0	0	188	34	26	0	184	175	166	0	773
845-900	0	0	0	0	179	37	19	0	200	171	193	0	799

HOUR TOTALS

TIME	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTAL
700-800	0	0	0	0	662	160	98	0	690	821	595	0	3026
715-815	0	0	0	0	736	160	132	0	750	855	680	0	3313
730-830	0	0	0	0	824	182	147	0	781	830	702	0	3466
745-845	0	0	0	0	829	170	150	0	764	794	705	0	3412
800-900	0	0	0	0	802	164	125	0	776	738	692	0	3298
PHF		#DIV/0!			0.90			0.94			0.88		0.95

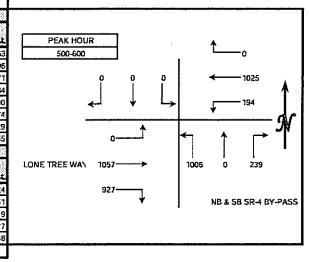


15 MIN COUNTS: 4:00 PM TO 6:00 PM

PERIOD	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTAL
400-415	0	0	0	0	245	41	32	0	207	240	297	0	1063
415-430	0	0	0	0	237	36	45	0	221	213	254	0	1006
430-445	0	0	0	0	248	57	50	0	241	219	256	0	1071
445-500	0	0	0	0	230	35	43	0	228	212	236	0	984
500-515	0	0	0	0	262	58	49	0	249	210	262	0	1090
515-530	0	0	0	0	259	58	76	0	258	226	297	0	1174
530-545	0	0	0	0	264	43	62	0	254	255	251	0	1129
545-600	0	0	0	0	240	35	52	0	245	236	247	0	1055

HOUR TOTALS

TIME	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTAL
400-500	0	0	0	0	961	169	170	0	897	884	1043	0	4124
415-515	0	0	0	0	977	186	187	0	939	854	1008	0	4151
430-530	0	0	0	0	999	208	218	0	976	867	1051	0	4319
445-545	0	0	0	0	1015	194	230	0	989	903	1046	0	4377
500-600	0	0	0	0	1025	194	239	0	1006	927	1057	0	4448
PHF		#DIV/0!			0.95			0.93			0.92		0.95



WILTEC

Phone: (925) 706-9911 Fax: (925) 706-9914

INTERSECTION TURNING MOVEMENT COUNT SUMMARY

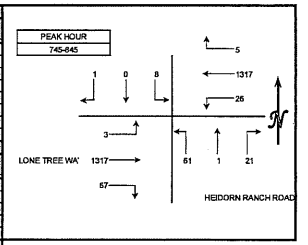
CLIENT: KIMLEY-HORN AND ASSOCIATES, INC.
PROJECT: ANTIOCH 05-06
DATE: WEDNESDAY MAY 24, 2006
PERIODS: 7:00 AM TO 9:00 AM AND 4:00 PM TO 6:00 PM
INTERSECTION: N/S HEIDORN RANCH ROAD
E/W LONE TREE WAY

15 MIN COUNTS: 7:00 AM TO 9:00 AM

PERIOD	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTAL
700-715	1	0	1	0	256	2	1	0	1	6	255	0	523
715-730	6	0	0	1	293	2	2	0	5	5	290	3	601
730-745	1	0	3	2	311	3	2	0	6	5	302	0	635
745-800	0	0	0	2	329	2	4	1	6	5	341	1	691
800-815	1	0	2	1	319	9	2	0	6	17	349	0	706
815-830	0	0	4	1	330	13	7	0	33	42	313	0	743
830-845	0	0	2	1	339	2	8	0	16	3	314	2	687
845-900	0	0	0	2	313	5	7	0	11	9	328	0	675

HOUR TOTALS

TIME	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTAL
700-800	2	0	4	5	1189	9	9	1	18	21	1188	4	2450
715-815	2	0	5	6	1252	16	10	1	23	32	1282	4	2633
730-830	2	0	9	6	1289	27	15	1	51	69	1305	1	2775
745-845	1	0	8	5	1317	28	21	1	61	67	1317	3	2827
800-900	1	0	8	5	1301	29	24	0	66	71	1304	2	2811
PHF		0.56			0.98			0.52			0.95		0.95

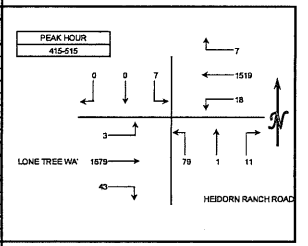


15 MIN COUNTS: 4:00 PM TO 6:00 PM

PERIOD	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTAL
400-415	0	0	2	0	267	0	14	1	20	21	422	0	847
415-430	0	0	0	0	380	5	2	0	16	9	401	1	814
430-445	0	0	3	4	390	7	3	0	21	9	398	1	836
445-500	0	0	1	1	372	3	3	1	20	12	432	0	845
500-515	0	0	3	2	377	3	3	0	22	13	448	1	872
515-530	0	0	0	2	378	2	2	1	8	5	407	0	801
530-545	0	0	1	3	343	3	3	1	12	8	406	0	778
545-600	0	0	2	2	321	5	5	0	6	6	379	0	726

HOUR TOTALS

TIME	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTAL
400-500	0	0	6	5	1509	15	22	2	77	51	1653	2	3342
415-515	0	0	7	7	1519	18	11	1	79	43	1679	3	3367
430-530	0	0	7	9	1515	15	11	2	89	39	1685	2	3354
445-545	0	0	5	8	1468	11	11	3	80	36	1693	1	3296
500-600	0	0	6	9	1417	13	13	2	46	30	1640	1	3177
PHF		0.58			0.96			0.65			0.93		0.97



WILTEC

Phone: (626) 564-1944 Fax: (626) 564-0969

INTERSECTION TURNING MOVEMENT COUNT SUMMARY

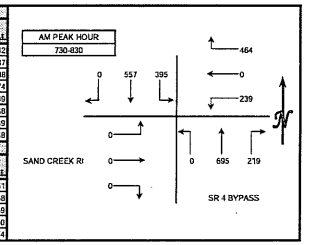
CLIENT: KIMLEY HORN AND ASSOCIATES
PROJECT: ANTIOCH TRAFFIC COUNT
DATE: TUESDAY, OCTOBER 31, 2006
PERIODS: 7:00 AM TO 9:00 AM AND 4:00 PM TO 6:00 PM
INTERSECTION: N/S SR 4 BYPASS
E/W SAND CREEK ROAD

15 MIN COUNTS: 7:00 AM TO 9:00 AM

PERIOD	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTAL
700-715	0	146	53	69	0	50	5	118	0	0	0	0	442
715-730	0	155	64	89	0	66	18	145	0	0	0	0	537
730-745	0	148	79	99	0	79	32	174	0	0	0	0	608
745-800	0	141	111	109	0	69	66	178	0	0	0	0	674
800-815	0	130	102	120	0	50	75	172	0	0	0	0	649
815-830	0	138	103	139	0	41	46	171	0	0	0	0	638
830-845	0	175	82	107	0	26	19	140	0	0	0	0	549
845-900	0	148	108	91	0	30	13	148	0	0	0	0	538

HOUR TOTALS

TIME	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTAL
700-800	0	590	307	353	0	264	122	615	0	0	0	0	2251
715-815	0	574	356	414	0	264	191	669	0	0	0	0	2468
730-830	0	557	395	464	0	239	219	695	0	0	0	0	2569
745-845	0	584	398	475	0	186	206	661	0	0	0	0	2510
800-900	0	591	395	457	0	147	153	631	0	0	0	0	2374
PHF		0.93			0.98			0.93			#DIV/0!		0.95

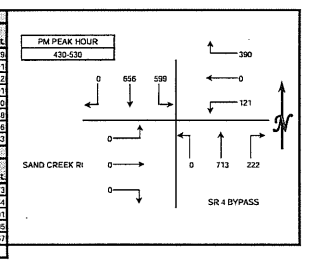


15 MIN COUNTS: 4:00 PM TO 6:00 PM

PERIOD	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTAL
400-415	0	163	119	100	0	43	58	166	0	0	0	0	649
415-430	0	196	143	98	0	28	64	172	0	0	0	0	701
430-445	0	149	143	82	0	33	52	163	0	0	0	0	622
445-500	0	170	155	103	0	21	60	192	0	0	0	0	701
500-515	0	154	143	94	0	36	41	162	0	0	0	0	630
515-530	0	183	158	111	0	31	69	195	0	0	0	0	748
530-545	0	145	134	94	0	39	53	141	0	0	0	0	606
545-600	0	112	121	73	0	24	35	118	0	0	0	0	483

HOUR TOTALS

TIME	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTAL
400-500	0	678	560	383	0	125	234	693	0	0	0	0	2673
415-515	0	669	594	377	0	118	217	689	0	0	0	0	2664
430-530	0	656	599	390	0	121	222	713	0	0	0	0	2701
445-545	0	552	590	402	0	127	223	691	0	0	0	0	2585
500-600	0	594	556	372	0	130	198	617	0	0	0	0	2467
PHF		0.92			0.89			0.88			#DIV/0!		0.90



WILTEC

Phone: (925) 706-9911 Fax: (925) 706-9914

INTERSECTION TURNING MOVEMENT COUNT SUMMARY

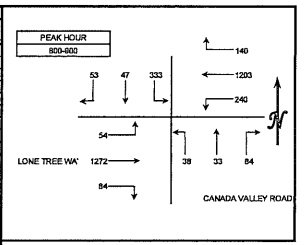
CLIENT: KIMLEY-HORN AND ASSOCIATES, INC.
PROJECT: ANTIOCH 05-06
DATE: WEDNESDAY MAY 24, 2006
PERIODS: 7:00 AM TO 9:00 AM AND 4:00 PM TO 6:00 PM
INTERSECTION: N/S CANADA VALLEY ROAD
E/W LONE TREE WAY

15 MIN COUNTS: 7:00 AM TO 9:00 AM

PERIOD	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTAL
700-715	10	5	33	20	241	24	9	3	12	6	233	11	607
715-730	8	1	46	30	252	20	10	2	5	11	285	5	675
730-745	24	6	58	40	288	35	11	3	6	23	280	10	764
745-800	24	10	80	64	277	38	15	2	9	9	314	11	853
800-815	14	26	85	39	310	40	14	10	9	12	321	14	894
815-830	11	5	81	47	305	70	19	9	9	19	319	12	906
830-845	18	13	97	28	282	58	22	9	10	23	305	15	880
845-900	10	3	70	26	306	72	29	5	10	30	327	13	901

HOUR TOTALS

TIME	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTAL
700-800	56	22	217	154	1059	117	45	10	32	49	1092	37	2899
715-815	70	43	289	173	1127	133	50	17	29	55	1180	40	3186
730-830	73	47	304	190	1180	183	59	24	33	63	1214	47	3417
745-845	67	54	343	178	1174	206	70	30	37	63	1259	52	3533
800-900	53	47	333	140	1203	240	84	33	38	84	1272	54	3581
PHF		0.85			0.94			0.88			0.95		0.99

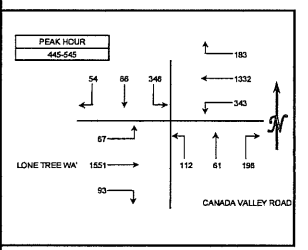


15 MIN COUNTS: 4:00 PM TO 6:00 PM

PERIOD	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTAL
400-415	5	17	72	47	317	73	51	16	28	27	366	13	1032
415-430	18	9	75	68	352	76	44	17	20	20	348	20	1067
430-445	8	14	81	54	338	74	34	9	26	22	370	19	1049
445-500	19	6	101	56	329	94	51	17	21	25	351	16	1088
500-515	14	24	88	43	348	84	42	11	31	25	347	13	1070
515-530	13	23	73	52	331	72	47	13	30	23	445	19	1140
530-545	8	13	84	32	324	93	58	20	30	20	408	20	1109
545-600	13	8	70	56	359	73	38	10	19	24	378	14	1082

HOUR TOTALS

TIME	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTAL
400-500	50	46	329	225	1336	317	180	59	95	94	1435	68	4234
415-515	59	53	345	221	1367	328	171	54	98	92	1416	68	4272
430-530	54	67	343	205	1346	324	174	50	108	95	1513	66	4345
445-545	54	86	348	183	1332	343	196	61	112	93	1551	67	4404
500-600	48	88	315	183	1362	322	183	54	110	92	1578	65	4360
PHF		0.92			0.94			0.87			0.88		0.97



EXISTING CONDITIONS
(TRAFFIX & SYNCRHO)

Antioch Aviano Adult Community TIA
Existing AM

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Del/ Veh	V/ C	Future LOS	Del/ Veh	V/ C	Change in
# 1 Lone Tree Way/Deer Valley Rd	B	xxxxx	0.684	B	xxxxx	0.684	+ 0.000 V/C
# 2 Deer Valley Road/Marita Drive	A	xxxxx	0.325	A	xxxxx	0.325	+ 0.000 V/C
# 3 Deer Valley Road/Prewett Ranch	A	xxxxx	0.483	A	xxxxx	0.483	+ 0.000 V/C
# 4 Deer Valley Road/Wellness Way	A	xxxxx	0.338	A	xxxxx	0.338	+ 0.000 V/C
# 5 Deer Valley Road/Kaiser	A	xxxxx	0.247	A	xxxxx	0.247	+ 0.000 V/C
# 6 Deer Valley Road/Sand Creek Ro	A	xxxxx	0.252	A	xxxxx	0.252	+ 0.000 V/C
# 12 Hillcrest Ave/Prewett Ranch Dr	A	8.7	0.214	A	8.7	0.214	+ 0.000 V/C
# 13 Hillcrest Avenue/Vista Grande	A	xxxxx	0.106	A	xxxxx	0.106	+ 0.000 V/C
# 14 Lone Tree Way/Hillcrest Avenue	A	xxxxx	0.541	A	xxxxx	0.541	+ 0.000 V/C
# 15 Lone Tree Way/Vista Grande Dri	A	xxxxx	0.517	A	xxxxx	0.517	+ 0.000 V/C
# 16 Lone Tree Way/Heidorn Ranch Ro	A	xxxxx	0.440	A	xxxxx	0.440	+ 0.000 V/C
# 17 Lone Tree Way/Canada Valley Ro	B	xxxxx	0.619	B	xxxxx	0.619	+ 0.000 V/C
# 18 Lone Tree Way/SB SR-4 Bypass	B	xxxxx	0.613	B	xxxxx	0.613	+ 0.000 V/C
# 19 Lone Tree Way/NB SR-4 Bypass (	A	xxxxx	0.295	A	xxxxx	0.295	+ 0.000 V/C
# 21 SR-4 Bypass/Sand Creek Road	B	xxxxx	0.634	B	xxxxx	0.634	+ 0.000 V/C
# 23 Mammoth Way/ Deer Valley	A	xxxxx	0.182	A	xxxxx	0.182	+ 0.000 V/C

Traffix 7.9.0415 (c) 2007 Dowling Assoc. Licensed to KIMLEY-HORN, SAN RAMON

Antioch Aviano Adult Community TIA
Existing AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #1 Lone Tree Way/Deer Valley Rd

Cycle (sec): 130 Critical Vol./Cap.(X): 0.684
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 106 Level Of Service: B

Street Name:	Deer Valley Road								Lone Tree Way							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	L	-	T	-	L	-	T	-	L	-	T	-
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	15	32		0	15	32		0	15	32		0	15	32		0
Lanes:	2	0	1	1	0	1	0	1	1	0	1	0	2	0	1	0
Volume Module:																
Base Vol:	220	279		98	435	435		19	59	828		163	153	892		197
Growth Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
Initial Bse:	220	279		98	435	435		19	59	828		163	153	892		197
Added Vol:	0	0		0	0	0		0	0	0		0	0	0		0
PasserByVol:	0	0		0	0	0		0	0	0		0	0	0		0
Initial Fut:	220	279		98	435	435		19	59	828		163	153	892		197
User Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
PHF Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
PHF Volume:	220	279		98	435	435		19	59	828		163	153	892		197
Reduct Vol:	0	0		0	0	0		0	0	0		0	0	0		0
Reduced Vol:	220	279		98	435	435		19	59	828		163	153	892		197
RTOR Reduct:	0	0		0	0	0		0	0	0		121	0	0		197
RTOR Vol:	220	279		98	435	435		19	59	828		42	153	892		0
PCE Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
MLF Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
FinalVolume:	220	279		98	435	435		19	59	828		42	153	892		0
Saturation Flow Module:																
Sat/Lane:	1650	1650		1650	1650	1650		1650	1650	1650		1650	1650	1650		1650
Adjustment:	0.91	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
Lanes:	2.00	1.48		0.52	1.00	1.92		0.08	1.00	2.00		1.00	1.00	2.00		1.00
Final Sat.:	3000	2442		858	1650	3162		138	1650	3300		1650	1650	3300		1650
Capacity Analysis Module:																
Vol/Sat:	0.07	0.11		0.11	0.26	0.14		0.14	0.04	0.25		0.03	0.09	0.27		0.00
Crit Volume:		188			435				59					446		
Crit Moves:		****			****				****					****		

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Antioch Aviano Adult Community TIA
Existing AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #2 Deer Valley Road/Marita Drive

Cycle (sec): 100 Critical Vol./Cap.(X): 0.325
Loss Time (sec): 3 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 15 Level Of Service: A

Street Name:	Deer Valley Road								Marita Drive							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	L	-	T	-	L	-	T	-	L	-	T	-
Control:	Protected				Protected				Permitted				Permitted			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0		0	0	0		0	0	0		0	0	0		0
Lanes:	1	0	1	1	0	1	0	1	1	0	1	0	1	0	1	0
Volume Module:																
Base Vol:	65	610		33	195	570		13	18	10		20	12	1		15
Growth Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
Initial Bse:	65	610		33	195	570		13	18	10		20	12	1		15
Added Vol:	0	0		0	0	0		0	0	0		0	0	0		0
PasserByVol:	0	0		0	0	0		0	0	0		0	0	0		0
Initial Fut:	65	610		33	195	570		13	18	10		20	12	1		15
User Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
PHF Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
PHF Volume:	65	610		33	195	570		13	18	10		20	12	1		15
Reduct Vol:	0	0		0	0	0		0	0	0		0	0	0		0
Reduced Vol:	65	610		33	195	570		13	18	10		20	12	1		15
RTOR Reduct:	0	0		0	0	0		0	0	0		0	0	0		0
RTOR Vol:	65	610		33	195	570		13	18	10		20	12	1		15
PCE Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
MLF Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
FinalVolume:	65	610		33	195	570		13	18	10		20	12	1		15
Saturation Flow Module:																
Sat/Lane:	1720	1720		1720	1720	1720		1720	1720	1720		1720	1720	1720		1720
Adjustment:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
Lanes:	1.00	1.90		0.10	1.00	1.96		0.04	1.00	0.33		0.67	1.00	0.06		0.94
Final Sat.:	1720	3263		177	1720	3363		77	1720	573		1147	1720	108		1613
Capacity Analysis Module:																
Vol/Sat:	0.04	0.19		0.19	0.11	0.17		0.17	0.01	0.02		0.02	0.01	0.01		0.01
Crit Volume:		322		195					30				12			
Crit Moves:		****		****					****				****			

Traffix 7.9.0415 (c) 2007 Dowling Assoc. Licensed to KIMLEY-HORN, SAN RAMON

Antioch Aviano Adult Community TIA
Existing AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #3 Deer Valley Road/Prewett Ranch Drive

Cycle (sec): 100 Critical Vol./Cap.(X): 0.483
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 36 Level Of Service: A

Street Name:	Deer Valley Road								Prewett Ranch Drive							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	L	-	T	-	L	-	T	-	L	-	T	-
Control:	Protected				Protected				Permitted				Permitted			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0		0	0	0		0	0	0		0	0	0		0
Lanes:	1	0	1	1	0	1	0	1	1	0	1	0	1	0	1	0
Volume Module:																
Base Vol:	37	339		76	135	367		117	79	205		67	41	230		180
Growth Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
Initial Bse:	37	339		76	135	367		117	79	205		67	41	230		180
Added Vol:	0	0		0	0	0		0	0	0		0	0	0		0
PasserByVol:	0	0		0	0	0		0	0	0		0	0	0		0
Initial Fut:	37	339		76	135	367		117	79	205		67	41	230		180
User Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
PHF Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
PHF Volume:	37	339		76	135	367		117	79	205		67	41	230		180
Reduct Vol:	0	0		0	0	0		0	0	0		0	0	0		0
Reduced Vol:	37	339		76	135	367		117	79	205		67	41	230		180
RTOR Reduct:	0	0		0	0	0		0	0	0		0	0	0		0
RTOR Vol:	37	339		76	135	367		117	79	205		67	41	230		180
PCE Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
MLF Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
FinalVolume:	37	339		76	135	367		117	79	205		67	41	230		180
Saturation Flow Module:																
Sat/Lane:	1720	1720		1720	1720	1720		1720	1720	1720		1720	1720	1720		1720
Adjustment:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
Lanes:	1.00	1.63		0.37	1.00	1.52		0.48	1.00	0.75		0.25	1.00	0.56		0.44
Final Sat.:	1720	2810		630	1720	2608		832	1720	1296		424	1720	965		755
Capacity Analysis Module:																
Vol/Sat:	0.02	0.12		0.12	0.08	0.14		0.14	0.05	0.16		0.16	0.02	0.24		0.24
Crit Volume:		208		135					79					410		
Crit Moves:		****		****					****					****		

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Antioch Aviano Adult Community TIA
Existing AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #4 Deer Valley Road/Wellness Way

Cycle (sec): 100 Critical Vol./Cap.(X): 0.338
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 28 Level Of Service: A

Street Name:	Deer Valley Road								Wellness Way							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Permitted				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Lanes:	1	0	2	0 1	1	0	1	0 0	0	0	0	0 0	1	0	0	0 1
Volume Module:																
Base Vol:	0	416	0		0	558	0		0	0	0		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	416	0		0	558	0		0	0	0		0	0	0	
Added Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	416	0		0	558	0		0	0	0		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	416	0		0	558	0		0	0	0		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	416	0		0	558	0		0	0	0		0	0	0	
RTOR Reduct:	0	0	0		0	0	0		0	0	0		0	0	0	
RTOR Vol:	0	416	0		0	558	0		0	0	0		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	0	416	0		0	558	0		0	0	0		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1650	1650	1650		1650	1650	1650		1650	1650	1650		1650	1650	1650	
Adjustment:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Lanes:	1.00	2.00	1.00		1.00	1.00	0.00		0.00	0.00	0.00		1.00	0.00	1.00	
Final Sat.:	1650	3300	1650		1650	1650	0		0	0	0		1650	0	1650	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.13	0.00		0.00	0.34	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
Crit Volume:	0					558				0				0		
Crit Moves:	****					****										

Antioch Aviano Adult Community TIA
Existing AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #5 Deer Valley Road/Kaiser

Cycle (sec): 100 Critical Vol./Cap.(X): 0.247
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 29 Level Of Service: A

Street Name:	Deer Valley Road								Kaiser							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Permitted				Protected				Permitted				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Lanes:	0	0	2	0 1	1	0	1	0 0	0	0	0	0 0	1	0	0	0 1
Volume Module:																
Base Vol:	0	397	36		158	400	0		0	0	0		8	0	19	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	397	36		158	400	0		0	0	0		8	0	19	
Added Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	397	36		158	400	0		0	0	0		8	0	19	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	397	36		158	400	0		0	0	0		8	0	19	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	397	36		158	400	0		0	0	0		8	0	19	
RTOR Reduct:	0	0	8		0	0	0		0	0	0		0	0	19	
RTOR Vol:	0	397	28		158	400	0		0	0	0		8	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	0	397	28		158	400	0		0	0	0		8	0	0	
Saturation Flow Module:																
Sat/Lane:	1650	1650	1650		1650	1650	1650		1650	1650	1650		1650	1650	1650	
Adjustment:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Lanes:	0.00	2.00	1.00		1.00	1.00	0.00		0.00	0.00	0.00		1.00	0.00	1.00	
Final Sat.:	0	3300	1650		1650	1650	0		0	0	0		1650	0	1650	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.12	0.02		0.10	0.24	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
Crit Volume:		199				400					0			8		
Crit Moves:						****								****		

Antioch Aviano Adult Community TIA
Existing AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #6 Deer Valley Road/Sand Creek Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.252
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 25 Level Of Service: A

Street Name:	Deer Valley Road								Sand Creek Road							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Permitted				Permitted			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Lanes:	1	0	0	1 0	1	0	0	1 0	0	0	1	0 0	0	1	0	0 1
Volume Module:																
Base Vol:	0	433	0		0	408	0		0	0	0		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	433	0		0	408	0		0	0	0		0	0	0	
Added Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	433	0		0	408	0		0	0	0		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	433	0		0	408	0		0	0	0		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	433	0		0	408	0		0	0	0		0	0	0	
RTOR Reduct:	0	0	0		0	0	0		0	0	0		0	0	0	
RTOR Vol:	0	433	0		0	408	0		0	0	0		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	0	433	0		0	408	0		0	0	0		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1720	1720	1720		1720	1720	1720		1720	1720	1720		1720	1720	1720	
Adjustment:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Lanes:	1.00	1.00	0.00		1.00	1.00	0.00		0.00	1.00	0.00		0.00	1.00	1.00	
Final Sat.:	1720	1720	0		1720	1720	0		0	1720	0		0	1720	1720	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.25	0.00		0.00	0.24	0.00		0.00	0.00	0.00		0.00	0.00	0.00	
Crit Volume:		433				0				0				0		
Crit Moves:		****				****										

Antioch Aviano Adult Community TIA
Existing AM

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #12 Hillcrest Ave/Prewett Ranch Dr

Cycle (sec): 100 Critical Vol./Cap.(X): 0.214
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 8.7
Optimal Cycle: 0 Level Of Service: A

Street Name:	Hillcrest Ave								Prewett Dr							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Lanes:	0	0	0	0 0	1	0	0	0 1	1	0	1	0 0	0	0	1	0
Volume Module:																
Base Vol:	0	0	0		13	0	108		121	30	0		0	47	6	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	0	0		13	0	108		121	30	0		0	47	6	
Added Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	0	0		13	0	108		121	30	0		0	47	6	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		0.82	0.82	0.82		0.88	0.88	0.88		0.47	0.47	0.47	
PHF Volume:	0	0	0		16	0	132		138	34	0		0	100	13	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	0	0		16	0	132		138	34	0		0	100	13	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	0	0	0		16	0	132		138	34	0		0	100	13	
Saturation Flow Module:																
Adjustment:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Lanes:	0.00	0.00	0.00		1.00	0.00	1.00		1.00	1.00	0.00		0.00	0.89	0.11	
Final Sat.:	0	0	0		606	0	761		644	707	0		0	645	82	
Capacity Analysis Module:																
Vol/Sat:	xxxx	xxxx	xxxx		0.03	xxxx	0.17		0.21	0.05	xxxx		xxxx	0.16	0.16	
Crit Moves:							****		****						****	
Delay/Veh:	0.0	0.0	0.0		8.6	0.0	8.1		9.6	7.9	0.0		0.0	8.7	8.7	
Delay Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	0.0	0.0		8.6	0.0	8.1		9.6	7.9	0.0		0.0	8.7	8.7	
LOS by Move:	*		*		A	*	A		A	A	*		*	A	A	
ApproachDel:	xxxxxx					8.2				9.3				8.7		
Delay Adj:	xxxxx					1.00				1.00				1.00		
ApprAdjDel:	xxxxxx					8.2				9.3				8.7		
LOS by Appr:	*					A				A				A		
AllWayAvgQ:	0.0	0.0	0.0		0.6	0.0	4.7		6.4	1.2	0.0		4.3	4.3	4.3	

Note: Queue reported is the distance per lane in feet.

Antioch Aviano Adult Community TIA
Existing AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #13 Hillcrest Avenue/Vista Grande Drive

Cycle (sec): 100 Critical Vol./Cap.(X): 0.106
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 21 Level Of Service: A

Street Name:	Hillcrest Avenue						Vista Grande Drive					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Protected			Permitted			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0 1	1 0	1	0 2	0 0	0	0 0	0 0	1	0 0	0 1
Volume Module:												
Base Vol:	0	80	49	55	70	0	0	0	0	55	0	56
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	80	49	55	70	0	0	0	0	55	0	56
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	80	49	55	70	0	0	0	0	55	0	56
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	80	49	55	70	0	0	0	0	55	0	56
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	80	49	55	70	0	0	0	0	55	0	56
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	55
RTOR Vol:	0	80	49	55	70	0	0	0	0	55	0	1
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	80	49	55	70	0	0	0	0	55	0	1
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	1.24	0.76	1.00	2.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Final Sat.:	0	2047	1253	1650	3300	0	0	0	0	1650	0	1650
Capacity Analysis Module:												
Vol/Sat:	0.00	0.04	0.04	0.03	0.02	0.00	0.00	0.00	0.00	0.03	0.00	0.00
Crit Volume:			65	55					0	55		
Crit Moves:			****	****						****		

Antioch Aviano Adult Community TIA
Existing AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #14 Lone Tree Way/Hillcrest Avenue

Cycle (sec): 130 Critical Vol./Cap.(X): 0.541
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 50 Level Of Service: A

Street Name:	Hillcrest Avenue						Lone Tree Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 1	1 0	1	1 1	0 1	1	0 1	1 0	1	0 3	0 1
Volume Module:												
Base Vol:	45	73	9	710	83	294	171	640	17	37	857	525
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	45	73	9	710	83	294	171	640	17	37	857	525
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	45	73	9	710	83	294	171	640	17	37	857	525
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	45	73	9	710	83	294	171	640	17	37	857	525
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	45	73	9	710	83	294	171	640	17	37	857	525
RTOR Reduct:	0	0	0	0	0	171	0	0	0	0	0	391
RTOR Vol:	45	73	9	710	83	123	171	640	17	37	857	135
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	45	73	9	710	83	123	171	640	17	37	857	135
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.78	0.22	2.00	1.00	1.00	1.00	1.95	0.05	1.00	3.00	1.00
Final Sat.:	1650	2938	362	3000	1650	1650	1650	3215	85	1650	4950	1650
Capacity Analysis Module:												
Vol/Sat:	0.03	0.02	0.02	0.24	0.05	0.07	0.10	0.20	0.20	0.02	0.17	0.08
Crit Volume:	45			355			171			286		
Crit Moves:	****			****			****			****		

Antioch Aviano Adult Community TIA
Existing AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #15 Lone Tree Way/Vista Grande Drive

Cycle (sec): 130 Critical Vol./Cap.(X): 0.517
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 38 Level Of Service: A

Street Name:	Vista Grande Drive						Lone Tree Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 0	1 0	1	0 0	1 0	1	0 2	0 1	1	0 2	0 1
Volume Module:												
Base Vol:	76	29	92	38	18	30	50	1280	34	42	1359	24
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	76	29	92	38	18	30	50	1280	34	42	1359	24
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	76	29	92	38	18	30	50	1280	34	42	1359	24
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	76	29	92	38	18	30	50	1280	34	42	1359	24
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	76	29	92	38	18	30	50	1280	34	42	1359	24
RTOR Reduct:	0	0	0	0	0	0	0	0	34	0	0	24
RTOR Vol:	76	29	92	38	18	30	50	1280	0	42	1359	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	76	29	92	38	18	30	50	1280	0	42	1359	0
Saturation Flow Module:												
Sat/Lane:	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.24	0.76	1.00	0.38	0.62	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1720	412	1308	1720	645	1075	1720	3440	1720	1720	3440	1720
Capacity Analysis Module:												
Vol/Sat:	0.04	0.07	0.07	0.02	0.03	0.03	0.03	0.37	0.00	0.02	0.40	0.00
Crit Volume:		121		38			50			680		
Crit Moves:		****		****			****			****		

Antioch Aviano Adult Community TIA
Existing AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #16 Lone Tree Way/Heidorn Ranch Road

Cycle (sec): 120 Critical Vol./Cap.(X): 0.440
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 41 Level Of Service: A

Street Name:	Heidorn Ranch Road						Lone Tree Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2	0 1	0 1	1	0 0	1 0	1	0 2	0 1	1	0 2	0 1
Volume Module:												
Base Vol:	61	1	21	8	0	1	3	1317	67	26	1317	5
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	61	1	21	8	0	1	3	1317	67	26	1317	5
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	61	1	21	8	0	1	3	1317	67	26	1317	5
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	61	1	21	8	0	1	3	1317	67	26	1317	5
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	61	1	21	8	0	1	3	1317	67	26	1317	5
RTOR Reduct:	0	0	21	0	0	0	0	0	34	0	0	5
RTOR Vol:	61	1	0	8	0	1	3	1317	33	26	1317	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	61	1	0	8	0	1	3	1317	33	26	1317	0
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	1.00	1.00	1.00	0.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	3000	1650	1650	1650	0	1650	1650	3300	1650	1650	3300	1650
Capacity Analysis Module:												
Vol/Sat:	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.40	0.02	0.02	0.40	0.00
Crit Volume:	31			8			659			26		
Crit Moves:	****			****			****			****		

Antioch Aviano Adult Community TIA
Existing AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #17 Lone Tree Way/Canada Valley Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.619
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 60 Level Of Service: B

Street Name:	Canada Valley Road						Lone Tree Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2	0	0 1 1	1	0	1 0 1	1	0	3 0 1	2	0	2 0 1
Volume Module:												
Base Vol:	38	33	84	333	47	53	54	1272	84	240	1203	140
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	38	33	84	333	47	53	54	1272	84	240	1203	140
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	38	33	84	333	47	53	54	1272	84	240	1203	140
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	38	33	84	333	47	53	54	1272	84	240	1203	140
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	38	33	84	333	47	53	54	1272	84	240	1203	140
RTOR Reduct:	0	0	84	0	0	53	0	0	21	0	0	140
RTOR Vol:	38	33	0	333	47	0	54	1272	63	240	1203	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	38	33	0	333	47	0	54	1272	63	240	1203	0
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	0.91	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00
Lanes:	2.00	1.00	1.00	1.00	1.00	1.00	1.00	3.00	1.00	2.00	2.00	1.00
Final Sat.:	3000	1650	1500	1650	1650	1650	1650	4950	1650	3000	3300	1650
Capacity Analysis Module:												
Vol/Sat:	0.01	0.02	0.00	0.20	0.03	0.00	0.03	0.26	0.04	0.08	0.36	0.00
Crit Volume:		33		333			54				602	
Crit Moves:	****			****			****				****	

Antioch Aviano Adult Community TIA
Existing AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #18 Lone Tree Way/SB SR-4 Bypass

Cycle (sec): 100 Critical Vol./Cap.(X): 0.613
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 48 Level Of Service: B

Street Name:	SB SR-4 Bypass						Lone Tree Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Permitted			Permitted			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2	0	0 0 1	0	0	0 0 0	0	0	3 0 1	1	0	2 0 0
Volume Module:												
Base Vol:	781	0	147	0	0	0	0	702	830	182	824	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	781	0	147	0	0	0	0	702	830	182	824	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	781	0	147	0	0	0	0	702	830	182	824	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	781	0	147	0	0	0	0	702	830	182	824	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	781	0	147	0	0	0	0	702	830	182	824	0
RTOR Reduct:	0	0	147	0	0	0	0	0	430	0	0	0
RTOR Vol:	781	0	0	0	0	0	0	702	400	182	824	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	781	0	0	0	0	0	0	702	400	182	824	0
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	0.00	1.00	0.00	0.00	0.00	0.00	3.00	1.00	1.00	2.00	0.00
Final Sat.:	3000	0	1650	0	0	0	0	4950	1650	1650	3300	0
Capacity Analysis Module:												
Vol/Sat:	0.26	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.24	0.11	0.25	0.00
Crit Volume:	391				0				400	182		
Crit Moves:	****								****	****		

Antioch Aviano Adult Community TIA
Existing AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #19 Lone Tree Way/NB SR-4 Bypass (Jeffrey Way)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.295
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 42 Level Of Service: A

Street Name:	NB SR-4 Bypass (Jeffrey Way)						Lone Tree Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Permitted			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0	1! 0 0	0	0	1! 0 0	0	1	1 1 0	1	0	1 1 0
Volume Module:												
Base Vol:	4	0	3	0	0	0	0	838	11	12	1002	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	4	0	3	0	0	0	0	838	11	12	1002	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	4	0	3	0	0	0	0	838	11	12	1002	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	4	0	3	0	0	0	0	838	11	12	1002	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	4	0	3	0	0	0	0	838	11	12	1002	0
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Vol:	4	0	3	0	0	0	0	838	11	12	1002	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	4	0	3	0	0	0	0	838	11	12	1002	0
Saturation Flow Module:												
Sat/Lane:	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.57	0.00	0.43	0.00	1.00	0.00	0.00	2.96	0.04	1.00	2.00	0.00
Final Sat.:	983	0	737	0	1720	0	0	5093	67	1720	3440	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.16	0.01	0.29	0.00
Crit Volume:			7		0			283			501	
Crit Moves:			****								****	

Antioch Aviano Adult Community TIA
Existing AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #21 SR-4 Bypass/Sand Creek Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.634
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 51 Level Of Service: B

Street Name:	SR-4 Bypass						Sand Creek Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	1 1 0	1	0	2 0 0	0	0	0 0 0	0	1	0 0 1
Volume Module:												
Base Vol:	0	695	219	395	557	0	0	0	0	239	0	464
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	695	219	395	557	0	0	0	0	239	0	464
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	695	219	395	557	0	0	0	0	239	0	464
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	695	219	395	557	0	0	0	0	239	0	464
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	695	219	395	557	0	0	0	0	239	0	464
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	395
RTOR Vol:	0	695	219	395	557	0	0	0	0	239	0	69
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	695	219	395	557	0	0	0	0	239	0	69
Saturation Flow Module:												
Sat/Lane:	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.52	0.48	1.00	2.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Final Sat.:	1720	2616	824	1720	3440	0	0	0	0	1720	0	1720
Capacity Analysis Module:												
Vol/Sat:	0.00	0.27	0.27	0.23	0.16	0.00	0.00	0.00	0.00	0.14	0.00	0.04
Crit Volume:		457		395					0	239		
Crit Moves:		****		****						****		

Antioch Aviano Adult Community TIA
Existing AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #23 Mammoth Way/ Deer Valley

Cycle (sec): 100 Critical Vol./Cap.(X): 0.182
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 23 Level Of Service: A

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Control:	Protected				Permitted				Protected				Permitted			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Lanes:	1	0	2	0	0	0	1	1	0	1	0	0	1	0	0	0
Volume Module:																
Base Vol:	10	366	0		0	400	20		81	0	20		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	10	366	0		0	400	20		81	0	20		0	0	0	
Added Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	10	366	0		0	400	20		81	0	20		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	10	366	0		0	400	20		81	0	20		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	10	366	0		0	400	20		81	0	20		0	0	0	
RTOR Reduct:	0	0	0		0	0	0		0	0	10		0	0	0	
RTOR Vol:	10	366	0		0	400	20		81	0	10		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	10	366	0		0	400	20		81	0	10		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1650	1650	1650		1650	1650	1650		1650	1650	1650		1650	1650	1650	
Adjustment:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Lanes:	1.00	2.00	0.00		0.00	1.90	0.10		1.00	0.00	1.00		0.00	0.00	0.00	
Final Sat.:	1650	3300	0		0	3143	157		1650	0	1650		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.01	0.11	0.00		0.00	0.13	0.13		0.05	0.00	0.01		0.00	0.00	0.00	
Crit Volume:	10					210			81					0		
Crit Moves:	****					****			****							

Antioch Aviano Adult Community TIA
Existing PM

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in V/C
# 1 Lone Tree Way/Deer Valley Rd	B	xxxxx	0.668	B	xxxxx	0.668	+ 0.000
# 2 Deer Valley Road/Marita Drive	A	xxxxx	0.270	A	xxxxx	0.270	+ 0.000
# 3 Deer Valley Road/Prewett Ranch	A	xxxxx	0.368	A	xxxxx	0.368	+ 0.000
# 4 Deer Valley Road/Wellness Way	A	xxxxx	0.258	A	xxxxx	0.258	+ 0.000
# 5 Deer Valley Road/Kaiser	A	xxxxx	0.271	A	xxxxx	0.271	+ 0.000
# 6 Deer Valley Road/Sand Creek Ro	A	xxxxx	0.297	A	xxxxx	0.297	+ 0.000
# 12 Hillcrest Ave/Prewett Ranch Dr	A	9.0	0.257	A	9.0	0.257	+ 0.000
# 13 Hillcrest Avenue/Vista Grande	A	xxxxx	0.109	A	xxxxx	0.109	+ 0.000
# 14 Lone Tree Way/Hillcrest Avenue	B	xxxxx	0.643	B	xxxxx	0.643	+ 0.000
# 15 Lone Tree Way/Vista Grande Dri	B	xxxxx	0.628	B	xxxxx	0.628	+ 0.000
# 16 Lone Tree Way/Heidorn Ranch Ro	A	xxxxx	0.550	A	xxxxx	0.550	+ 0.000
# 17 Lone Tree Way/Canada Valley Ro	B	xxxxx	0.691	B	xxxxx	0.691	+ 0.000
# 18 Lone Tree Way/SB SR-4 Bypass	B	xxxxx	0.679	B	xxxxx	0.679	+ 0.000
# 19 Lone Tree Way/NB SR-4 Bypass (	A	xxxxx	0.356	A	xxxxx	0.356	+ 0.000
# 21 SR-4 Bypass/Sand Creek Road	B	xxxxx	0.690	B	xxxxx	0.690	+ 0.000
# 23 Mammoth Way/ Deer Valley	A	xxxxx	0.180	A	xxxxx	0.180	+ 0.000

Antioch Aviano Adult Community TIA
Existing PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #1 Lone Tree Way/Deer Valley Rd

Cycle (sec): 130 Critical Vol./Cap.(X): 0.668
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 106 Level Of Service: B

Street Name:	Deer Valley Road								Lone Tree Way							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	15	32	0		15	32	0		15	32	0		15	32	0	
Lanes:	2	0	1	1	0	1	0	1	1	0	1	0	2	0	1	
Volume Module:																
Base Vol:	221	306	115		230	302	22		122	1003	182		160	802	210	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	221	306	115		230	302	22		122	1003	182		160	802	210	
Added Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	221	306	115		230	302	22		122	1003	182		160	802	210	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	221	306	115		230	302	22		122	1003	182		160	802	210	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	221	306	115		230	302	22		122	1003	182		160	802	210	
RTOR Reduct:	0	0	0		0	0	0		0	0	122		0	0	210	
RTOR Vol:	221	306	115		230	302	22		122	1003	60		160	802	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	221	306	115		230	302	22		122	1003	60		160	802	0	
Saturation Flow Module:																
Sat/Lane:	1650	1650	1650		1650	1650	1650		1650	1650	1650		1650	1650	1650	
Adjustment:	0.91	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Lanes:	2.00	1.45	0.55		1.00	1.86	0.14		1.00	2.00	1.00		1.00	2.00	1.00	
Final Sat.:	3000	2399	901		1650	3076	224		1650	3300	1650		1650	3300	1650	
Capacity Analysis Module:																
Vol/Sat:	0.07	0.13	0.13		0.14	0.10	0.10		0.07	0.30	0.04		0.10	0.24	0.00	
Crit Volume:		211				230				502				160		
Crit Moves:		****				****				****				****		

Antioch Aviano Adult Community TIA
Existing PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #2 Deer Valley Road/Marita Drive

Cycle (sec): 100 Critical Vol./Cap.(X): 0.270
Loss Time (sec): 3 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 14 Level Of Service: A

Street Name:	Deer Valley Road								Marita Drive							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Control:	Protected				Protected				Permitted				Permitted			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Lanes:	1	0	1	1	0	1	0	1	1	0	1	0	1	0	1	0
Volume Module:																
Base Vol:	14	577	5		32	587	21		11	0	5		36	4	126	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	14	577	5		32	587	21		11	0	5		36	4	126	
Added Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	14	577	5		32	587	21		11	0	5		36	4	126	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	14	577	5		32	587	21		11	0	5		36	4	126	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	14	577	5		32	587	21		11	0	5		36	4	126	
RTOR Reduct:	0	0	0		0	0	0		0	0	0		0	0	0	
RTOR Vol:	14	577	5		32	587	21		11	0	5		36	4	126	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	14	577	5		32	587	21		11	0	5		36	4	126	
Saturation Flow Module:																
Sat/Lane:	1720	1720	1720		1720	1720	1720		1720	1720	1720		1720	1720	1720	
Adjustment:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Lanes:	1.00	1.98	0.02		1.00	1.93	0.07		1.00	0.00	1.00		1.00	0.03	0.97	
Final Sat.:	1720	3410	30		1720	3321	119		1720	0	1720		1720	53	1667	
Capacity Analysis Module:																
Vol/Sat:	0.01	0.17	0.17		0.02	0.18	0.18		0.01	0.00	0.00		0.02	0.08	0.08	
Crit Volume:			291			32				11					130	
Crit Moves:			****			****				****					****	

Antioch Aviano Adult Community TIA
Existing PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #3 Deer Valley Road/Prewett Ranch Drive

Cycle (sec): 100 Critical Vol./Cap.(X): 0.368
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 29 Level Of Service: A

Street Name:	Deer Valley Road						Prewett Ranch Drive					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 1	1 0	1	0 1	1 0	1	0 0	1 0	1	0 0	1 0
Volume Module:												
Base Vol:	89	414	57	139	392	88	74	97	42	18	99	86
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	89	414	57	139	392	88	74	97	42	18	99	86
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	89	414	57	139	392	88	74	97	42	18	99	86
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	89	414	57	139	392	88	74	97	42	18	99	86
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	89	414	57	139	392	88	74	97	42	18	99	86
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Vol:	89	414	57	139	392	88	74	97	42	18	99	86
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	89	414	57	139	392	88	74	97	42	18	99	86
Saturation Flow Module:												
Sat/Lane:	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.76	0.24	1.00	1.63	0.37	1.00	0.70	0.30	1.00	0.54	0.46
Final Sat.:	1720	3024	416	1720	2809	631	1720	1200	520	1720	920	800
Capacity Analysis Module:												
Vol/Sat:	0.05	0.14	0.14	0.08	0.14	0.14	0.04	0.08	0.08	0.01	0.11	0.11
Crit Volume:			236	139			74				185	
Crit Moves:			****	****			****				****	

Antioch Aviano Adult Community TIA
Existing PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #4 Deer Valley Road/Wellness Way

Cycle (sec): 100 Critical Vol./Cap.(X): 0.258
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 25 Level Of Service: A

Street Name:	Deer Valley Road						Wellness Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 2	0 1	1	0 1	0 0	0	0 0	0 0	1	0 0	0 1
Volume Module:												
Base Vol:	0	606	0	0	425	0	0	0	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	606	0	0	425	0	0	0	0	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	606	0	0	425	0	0	0	0	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	606	0	0	425	0	0	0	0	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	606	0	0	425	0	0	0	0	0	0	0
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Vol:	0	606	0	0	425	0	0	0	0	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	606	0	0	425	0	0	0	0	0	0	0
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Final Sat.:	1650	3300	1650	1650	1650	0	0	0	0	1650	0	1650
Capacity Analysis Module:												
Vol/Sat:	0.00	0.18	0.00	0.00	0.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Crit Volume:	0				425			0			0	
Crit Moves:	****				****							

Antioch Aviano Adult Community TIA
Existing PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #5 Deer Valley Road/Kaiser

Cycle (sec): 100 Critical Vol./Cap.(X): 0.271
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 32 Level Of Service: A

Street Name:	Deer Valley Road						Kaiser					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Protected			Permitted			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0 2	0 1	1	0 1	0 0	0	0 0	0 0	1	0 0	0 1
Volume Module:												
Base Vol:	0	496	15	44	381	0	0	0	0	47	0	110
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	496	15	44	381	0	0	0	0	47	0	110
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	496	15	44	381	0	0	0	0	47	0	110
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	496	15	44	381	0	0	0	0	47	0	110
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	496	15	44	381	0	0	0	0	47	0	110
RTOR Reduct:	0	0	15	0	0	0	0	0	0	0	0	44
RTOR Vol:	0	496	0	44	381	0	0	0	0	47	0	66
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	496	0	44	381	0	0	0	0	47	0	66
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	2.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Final Sat.:	0	3300	1650	1650	1650	0	0	0	0	1650	0	1650
Capacity Analysis Module:												
Vol/Sat:	0.00	0.15	0.00	0.03	0.23	0.00	0.00	0.00	0.00	0.03	0.00	0.04
Crit Volume:		248			381			0				66
Crit Moves:					****							****

Antioch Aviano Adult Community TIA
Existing PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #6 Deer Valley Road/Sand Creek Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.297
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 26 Level Of Service: A

Street Name:	Deer Valley Road						Sand Creek Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 0	1 0	1	0 0	1 0	0	0 1	0 0	0	1 0	0 1
Volume Module:												
Base Vol:	0	511	0	0	428	0	0	0	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	511	0	0	428	0	0	0	0	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	511	0	0	428	0	0	0	0	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	511	0	0	428	0	0	0	0	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	511	0	0	428	0	0	0	0	0	0	0
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Vol:	0	511	0	0	428	0	0	0	0	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	511	0	0	428	0	0	0	0	0	0	0
Saturation Flow Module:												
Sat/Lane:	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00
Final Sat.:	1720	1720	0	1720	1720	0	0	1720	0	0	1720	1720
Capacity Analysis Module:												
Vol/Sat:	0.00	0.30	0.00	0.00	0.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Crit Volume:		511			0			0			0	
Crit Moves:		****			****							

Antioch Aviano Adult Community TIA
Existing PM

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #12 Hillcrest Ave/Prewett Ranch Dr

Cycle (sec): 100 Critical Vol./Cap.(X): 0.257
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 9.0
Optimal Cycle: 0 Level Of Service: A

Street Name:	Hillcrest Ave						Prewett Dr					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0	0	0	1	0	0	0	1	1	0	1
Volume Module:												
Base Vol:	0	0	0	22	0	134	124	24	0	0	11	11
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	22	0	134	124	24	0	0	11	11
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	22	0	134	124	24	0	0	11	11
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	0.76	0.76	0.76	0.76	0.76	0.76	0.79	0.79	0.79
PHF Volume:	0	0	0	29	0	176	163	32	0	0	14	14
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	29	0	176	163	32	0	0	14	14
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	29	0	176	163	32	0	0	14	14
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.50	0.50
Final Sat.:	0	0	0	624	0	790	636	695	0	0	364	364
Capacity Analysis Module:												
Vol/Sat:	xxxx	xxxx	xxxx	0.05	xxxx	0.22	0.26	0.05	xxxx	xxxx	0.04	0.04
Crit Moves:						****	****				****	
Delay/Veh:	0.0	0.0	0.0	8.6	0.0	8.3	10.1	8.0	0.0	0.0	7.9	7.9
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	8.6	0.0	8.3	10.1	8.0	0.0	0.0	7.9	7.9
LOS by Move:	*	*	*	A	*	A	B	A	*	*	A	A
ApproachDel:	xxxxxx			8.4			9.7			7.9		
Delay Adj:	xxxxx			1.00			1.00			1.00		
ApprAdjDel:	xxxxxx			8.4			9.7			7.9		
LOS by Appr:	*			A			A			A		
AllWayAvgQ:	0.0	0.0	0.0	1.1	0.0	6.6	8.1	1.1	0.0	0.9	0.9	0.9

Note: Queue reported is the distance per lane in feet.

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Antioch Aviano Adult Community TIA
Existing PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #13 Hillcrest Avenue/Vista Grande Drive

Cycle (sec): 100 Critical Vol./Cap.(X): 0.109
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 21 Level Of Service: A

Street Name:	Hillcrest Avenue						Vista Grande Drive					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Protected			Permitted			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0	1	1	0	1	0	2	0	0	1	0	0	0	1
Volume Module:												
Base Vol:	0	80	61	60	100	0	0	0	0	50	0	29
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	80	61	60	100	0	0	0	0	50	0	29
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	80	61	60	100	0	0	0	0	50	0	29
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	80	61	60	100	0	0	0	0	50	0	29
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	80	61	60	100	0	0	0	0	50	0	29
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	29
RTOR Vol:	0	80	61	60	100	0	0	0	0	50	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	80	61	60	100	0	0	0	0	50	0	0
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	1.13	0.87	1.00	2.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Final Sat.:	0	1872	1428	1650	3300	0	0	0	0	1650	0	1650
Capacity Analysis Module:												
Vol/Sat:	0.00	0.04	0.04	0.04	0.03	0.00	0.00	0.00	0.00	0.03	0.00	0.00
Crit Volume:			71	60					0		50	
Crit Moves:			****	****							****	

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Antioch Aviano Adult Community TIA
Existing PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #14 Lone Tree Way/Hillcrest Avenue

Cycle (sec): 130 Critical Vol./Cap.(X): 0.643
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 64 Level Of Service: B

Street Name:	Hillcrest Avenue									Lone Tree Way					
Approach:	North Bound				South Bound				East Bound				West Bound		
Movement:	L	T	R		L	T	R		L	T	R		L	T	R
Control:	Split Phase				Split Phase				Protected				Protected		
Rights:	Include				Include				Include				Include		
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0
Lanes:	1	0	1	1	0	1	1	1	0	1	1	0	1	0	1
Volume Module:															
Base Vol:	39	53	20	788	96	75	169	1060	18	49	927	606			
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Initial Bse:	39	53	20	788	96	75	169	1060	18	49	927	606			
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0			
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0			
Initial Fut:	39	53	20	788	96	75	169	1060	18	49	927	606			
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
PHF Volume:	39	53	20	788	96	75	169	1060	18	49	927	606			
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0			
Reduced Vol:	39	53	20	788	96	75	169	1060	18	49	927	606			
RTOR Reduct:	0	0	0	0	0	75	0	0	0	0	0	433			
RTOR Vol:	39	53	20	788	96	0	169	1060	18	49	927	173			
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
FinalVolume:	39	53	20	788	96	0	169	1060	18	49	927	173			
Saturation Flow Module:															
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650			
Adjustment:	1.00	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Lanes:	1.00	1.45	0.55	2.00	1.00	1.00	1.00	1.97	0.03	1.00	3.00	1.00			
Final Sat.:	1650	2396	904	3000	1650	1650	1650	3245	55	1650	4950	1650			
Capacity Analysis Module:															
Vol/Sat:	0.02	0.02	0.02	0.26	0.06	0.00	0.10	0.33	0.33	0.03	0.19	0.10			
Crit Volume:	39			394					539	49					
Crit Moves:	****			****					****	****					

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Antioch Aviano Adult Community TIA
Existing PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #15 Lone Tree Way/Vista Grande Drive

Cycle (sec): 130 Critical Vol./Cap.(X): 0.628
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 50 Level Of Service: B

Street Name:	Vista Grande Drive						Lone Tree Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	0	1	0	1	0	0	1	0	1	0	1	0	1
Volume Module:												
Base Vol:	41	27	113	23	10	31	41	1626	60	104	1483	37
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	41	27	113	23	10	31	41	1626	60	104	1483	37
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	41	27	113	23	10	31	41	1626	60	104	1483	37
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	41	27	113	23	10	31	41	1626	60	104	1483	37
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	41	27	113	23	10	31	41	1626	60	104	1483	37
RTOR Reduct:	0	0	0	0	0	0	0	0	41	0	0	23
RTOR Vol:	41	27	113	23	10	31	41	1626	19	104	1483	14
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	41	27	113	23	10	31	41	1626	19	104	1483	14
Saturation Flow Module:												
Sat/Lane:	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.19	0.81	1.00	0.24	0.76	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1720	332	1388	1720	420	1300	1720	3440	1720	1720	3440	1720
Capacity Analysis Module:												
Vol/Sat:	0.02	0.08	0.08	0.01	0.02	0.02	0.02	0.47	0.01	0.06	0.43	0.01
Crit Volume:			140	23				813		104		
Crit Moves:			****	****				****		****		

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Antioch Aviano Adult Community TIA
Existing PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #16 Lone Tree Way/Heidorn Ranch Road

Cycle (sec): 120 Critical Vol./Cap.(X): 0.550
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 51 Level Of Service: A

Street Name:	Heidorn Ranch Road						Lone Tree Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2	0 1	0 1	1	0 0 1	0	1	0 2	0 1	1	0 2	0 1
Volume Module:												
Base Vol:	79	1	11	7	0	0	3	1679	43	18	1519	7
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	79	1	11	7	0	0	3	1679	43	18	1519	7
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	79	1	11	7	0	0	3	1679	43	18	1519	7
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	79	1	11	7	0	0	3	1679	43	18	1519	7
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	79	1	11	7	0	0	3	1679	43	18	1519	7
RTOR Reduct:	0	0	11	0	0	0	0	0	43	0	0	7
RTOR Vol:	79	1	0	7	0	0	3	1679	0	18	1519	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	79	1	0	7	0	0	3	1679	0	18	1519	0
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	1.00	1.00	1.00	1.00	0.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	3000	1650	1650	1650	1650	0	1650	3300	1650	1650	3300	1650
Capacity Analysis Module:												
Vol/Sat:	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.51	0.00	0.01	0.46	0.00
Crit Volume:	40			7			840			18		
Crit Moves:	****			****			****			****		

Antioch Aviano Adult Community TIA
Existing PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #17 Lone Tree Way/Canada Valley Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.691
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 74 Level Of Service: B

Street Name:	Canada Valley Road						Lone Tree Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2	0 0	1 1	1	0 1	0 1	1	0 3	0 1	2	0 2	0 1
Volume Module:												
Base Vol:	112	61	196	346	66	54	67	1551	93	343	1332	183
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	112	61	196	346	66	54	67	1551	93	343	1332	183
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	112	61	196	346	66	54	67	1551	93	343	1332	183
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	112	61	196	346	66	54	67	1551	93	343	1332	183
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	112	61	196	346	66	54	67	1551	93	343	1332	183
RTOR Reduct:	0	0	189	0	0	54	0	0	62	0	0	183
RTOR Vol:	112	61	7	346	66	0	67	1551	31	343	1332	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	112	61	7	346	66	0	67	1551	31	343	1332	0
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	0.91	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00
Lanes:	2.00	1.00	1.00	1.00	1.00	1.00	1.00	3.00	1.00	2.00	2.00	1.00
Final Sat.:	3000	1650	1500	1650	1650	1650	1650	4950	1650	3000	3300	1650
Capacity Analysis Module:												
Vol/Sat:	0.04	0.04	0.00	0.21	0.04	0.00	0.04	0.31	0.02	0.11	0.40	0.00
Crit Volume:		61		346			67				666	
Crit Moves:		****		****			****				****	

Antioch Aviano Adult Community TIA
Existing PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #18 Lone Tree Way/SB SR-4 Bypass

Cycle (sec): 100 Critical Vol./Cap.(X): 0.679
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 58 Level Of Service: B

Street Name:	SB SR-4 Bypass						Lone Tree Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Permitted			Permitted			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2	0 0	0 1	0	0 0 0	0	0	0 3	0 1	1	0 2	0 0
Volume Module:												
Base Vol:	1006	0	239	0	0	0	0	1057	927	194	1025	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	1006	0	239	0	0	0	0	1057	927	194	1025	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	1006	0	239	0	0	0	0	1057	927	194	1025	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	1006	0	239	0	0	0	0	1057	927	194	1025	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	1006	0	239	0	0	0	0	1057	927	194	1025	0
RTOR Reduct:	0	0	194	0	0	0	0	0	553	0	0	0
RTOR Vol:	1006	0	45	0	0	0	0	1057	374	194	1025	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	1006	0	45	0	0	0	0	1057	374	194	1025	0
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	0.00	1.00	0.00	0.00	0.00	0.00	3.00	1.00	1.00	2.00	0.00
Final Sat.:	3000	0	1650	0	0	0	0	4950	1650	1650	3300	0
Capacity Analysis Module:												
Vol/Sat:	0.34	0.00	0.03	0.00	0.00	0.00	0.00	0.21	0.23	0.12	0.31	0.00
Crit Volume:	503				0				374	194		
Crit Moves:	****								****	****		

Antioch Aviano Adult Community TIA
Existing PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #19 Lone Tree Way/NB SR-4 Bypass (Jeffrey Way)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.356
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 58 Level Of Service: A

Street Name:	NB SR-4 Bypass (Jeffrey Way)						Lone Tree Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Permitted			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0 1!	0 0	0	0 1!	0 0	0	1 1	1 0	1	0 1	1 0
Volume Module:												
Base Vol:	2	0	1	0	0	0	0	1294	2	20	1217	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	2	0	1	0	0	0	0	1294	2	20	1217	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	2	0	1	0	0	0	0	1294	2	20	1217	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	2	0	1	0	0	0	0	1294	2	20	1217	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	2	0	1	0	0	0	0	1294	2	20	1217	0
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Vol:	2	0	1	0	0	0	0	1294	2	20	1217	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	6.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	2	0	1	0	0	0	0	1294	2	20	1217	0
Saturation Flow Module:												
Sat/Lane:	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.67	0.00	0.33	0.00	1.00	0.00	0.00	2.99	0.01	1.00	2.00	0.00
Final Sat.:	1147	0	573	0	1720	0	0	5152	8	1720	3440	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.25	0.01	0.35	0.00
Crit Volume:			3		0			432			609	
Crit Moves:			****								****	

Antioch Aviano Adult Community TIA
Existing PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #21 SR-4 Bypass/Sand Creek Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.690
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 60 Level Of Service: B

Street Name:	SR-4 Bypass						Sand Creek Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 1	1 0	1	0 2	0 0	0	0 0	0 0	0	1 0	0 1
Volume Module:												
Base Vol:	0	713	222	599	656	0	0	0	0	121	0	390
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	713	222	599	656	0	0	0	0	121	0	390
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	713	222	599	656	0	0	0	0	121	0	390
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	713	222	599	656	0	0	0	0	121	0	390
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	713	222	599	656	0	0	0	0	121	0	390
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	390
RTOR Vol:	0	713	222	599	656	0	0	0	0	121	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	713	222	599	656	0	0	0	0	121	0	0
Saturation Flow Module:												
Sat/Lane:	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.53	0.47	1.00	2.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Final Sat.:	1720	2623	817	1720	3440	0	0	0	0	1720	0	1720
Capacity Analysis Module:												
Vol/Sat:	0.00	0.27	0.27	0.35	0.19	0.00	0.00	0.00	0.00	0.07	0.00	0.00
Crit Volume:			468	599				0		121		
Crit Moves:			****	****						****		

Antioch Aviano Adult Community TIA
Existing PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #23 Mammoth Way/ Deer Valley

Cycle (sec): 100 Critical Vol./Cap.(X): 0.180
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 28 Level Of Service: A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Permitted			Protected			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 2	0 0	0	0 1	1 0	1	0 0	0 1	0	0 0	0 0
Volume Module:												
Base Vol:	38	553	0	0	451	25	21	0	9	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	38	553	0	0	451	25	21	0	9	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	38	553	0	0	451	25	21	0	9	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	38	553	0	0	451	25	21	0	9	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	38	553	0	0	451	25	21	0	9	0	0	0
RTOR Reduct:	0	0	0	0	0	0	0	0	9	0	0	0
RTOR Vol:	38	553	0	0	451	25	21	0	0	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	38	553	0	0	451	25	21	0	0	0	0	0
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	0.00	0.00	1.89	0.11	1.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	1650	3300	0	0	3127	173	1650	0	1650	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.02	0.17	0.00	0.00	0.14	0.14	0.01	0.00	0.00	0.00	0.00	0.00
Crit Volume:		277			238		21				0	
Crit Moves:		****					****					

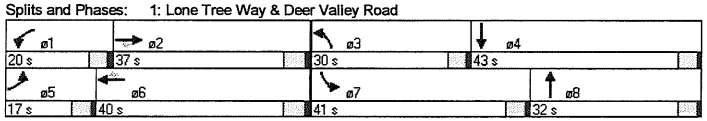
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	3433	3401	0	*2000	3518	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	3433	3401	0	1770	3518	0
Satd. Flow (RTOR)			56			65		35			3	
Volume (vph)	59	828	163	153	892	197	220	279	98	435	435	19
Lane Group Flow (vph)	69	974	192	189	1101	243	256	438	0	669	698	0
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6						
Total Split (s)	17.0	37.0	37.0	20.0	40.0	40.0	30.0	32.0	0.0	41.0	43.0	0.0
Act Effct Green (s)	11.4	40.1	40.1	16.6	47.4	47.4	18.2	23.3		38.0	43.1	
Actuated g/C Ratio	0.09	0.31	0.31	0.13	0.36	0.36	0.14	0.18		0.29	0.33	
v/c Ratio	0.44	0.89	0.36	0.84	0.85	0.39	0.53	0.69		1.14	0.60	
Uniform Delay, d1	57.4	42.9	24.2	55.3	38.9	22.2	51.9	45.8		46.0	36.0	
Delay	55.8	63.0	26.2	65.3	50.4	10.0	47.6	55.5		110.3	36.6	
LOS	E	E	C	E	D	B	D	E		F	D	
Approach Delay		56.8			45.9			52.6			72.7	
Approach LOS		E			D			D			E	
Queue Length 50th (ft)	56	410	87	126	504	99	82	193		~660	255	
Queue Length 95th (ft)	98	#541	153	#222	#569	95	97	240		488	221	
Internal Link Dist (ft)		900			1588			664			709	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	195		75	195		75	180			150		
50th Bay Block Time %		37%	13%		18%	7%		12%		57%	28%	
95th Bay Block Time %		49%	39%	7%	18%	6%		26%		50%	23%	
Queuing Penalty (veh)		29	127	18	34	36		48		187	171	

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 54 (42%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.14
Intersection Signal Delay: 57.2 Intersection LOS: E
Intersection Capacity Utilization 100.4% ICU Level of Service F

* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Lone Tree Way & Deer Valley Road

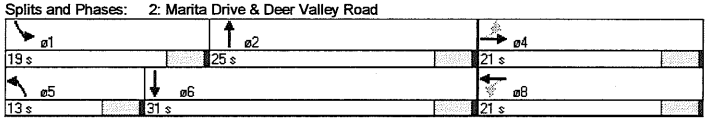


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	1676	0	1770	1598	0	1770	3511	0	1770	3529	0
Flt Permitted	0.746			0.736			0.950			0.950		
Satd. Flow (perm)	1390	1676	0	1371	1598	0	1770	3511	0	1770	3529	0
Satd. Flow (RTOR)		22			17			9			4	
Volume (vph)	18	10	20	12	1	15	65	610	33	195	570	13
Lane Group Flow (vph)	20	33	0	13	18	0	72	715	0	217	647	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Total Split (s)	21.0	21.0	0.0	21.0	21.0	0.0	13.0	25.0	0.0	19.0	31.0	0.0
Act Effct Green (s)	7.5	7.5		7.5	7.5		8.6	39.3		13.0	48.9	
Actuated g/C Ratio	0.12	0.12		0.12	0.12		0.13	0.60		0.20	0.75	
v/c Ratio	0.12	0.16		0.08	0.09		0.31	0.34		0.61	0.24	
Uniform Delay, d1	27.8	9.2		27.6	1.5		27.7	7.1		23.7	3.9	
Delay	25.4	14.8		25.2	13.3		28.9	6.4		23.9	4.3	
LOS	C	B		C	B		C	A		C	A	
Approach Delay		18.8			18.3			8.5			9.2	
Approach LOS		B			B			A			A	
Queue Length 50th (ft)	7	4		5	0		31	33		108	104	
Queue Length 95th (ft)	25	26		18	16		m64	67		m190	2	
Internal Link Dist (ft)		346			300			2263			664	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	40			100			175			125		
50th Bay Block Time %											3%	
95th Bay Block Time %										24%		
Queuing Penalty (veh)										39	4	

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 16 (25%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.61
Intersection Signal Delay: 9.3 Intersection LOS: A
Intersection Capacity Utilization 45.2% ICU Level of Service A
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Marita Drive & Deer Valley Road

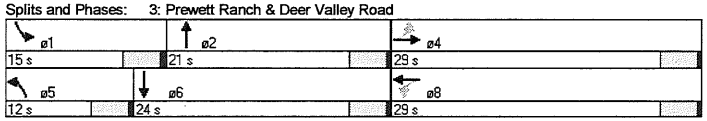


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	1794	0	1770	1740	0	1770	3444	0	1770	3412	0
Flt Permitted	0.303			0.468			0.950			0.950		
Satd. Flow (perm)	564	1794	0	872	1740	0	1770	3444	0	1770	3412	0
Satd. Flow (RTOR)		30			72			40			70	
Volume (vph)	79	205	67	41	230	180	37	339	76	135	367	117
Lane Group Flow (vph)	88	302	0	46	456	0	41	461	0	150	538	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Total Split (s)	29.0	29.0	0.0	29.0	29.0	0.0	12.0	21.0	0.0	15.0	24.0	0.0
Act Effct Green (s)	19.9	19.9		19.9	19.9		7.8	27.5		10.7	34.3	
Actuated g/C Ratio	0.31	0.31		0.31	0.31		0.12	0.42		0.16	0.53	
v/c Ratio	0.51	0.53		0.17	0.78		0.19	0.31		0.52	0.29	
Uniform Delay, d1	18.5	16.7		16.5	17.1		29.1	11.8		26.0	8.5	
Delay	17.5	15.7		14.5	16.4		38.6	7.4		16.5	14.4	
LOS	B	B		B	B		D	A		B	B	
Approach Delay		16.1			16.3			9.9			14.9	
Approach LOS		B			B			A			B	
Queue Length 50th (ft)	28	87		13	136		15	38		70	134	
Queue Length 95th (ft)	62	133		31	204		43	131		96	185	
Internal Link Dist (ft)		416			350			970			2263	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	155			80			140			140		
50th Bay Block Time %					33%							
95th Bay Block Time %		1%			39%						15%	
Queuing Penalty (veh)					16						11	

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 16 (25%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.78
Intersection Signal Delay: 14.2 Intersection LOS: B
Intersection Capacity Utilization 65.3% ICU Level of Service B

Splits and Phases: 3: Prewett Ranch & Deer Valley Road

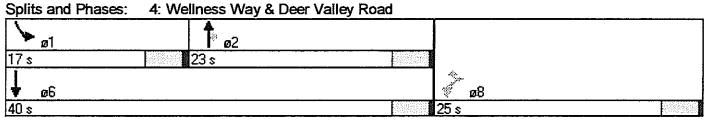


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	0	0	0	1863	0	1863	0	3539	1863	1863	1863	0
Flt Permitted												
Satd. Flow (perm)	0	0	0	1863	0	1863	0	3539	1863	1863	1863	0
Satd. Flow (RTOR)												
Volume (vph)	0	0	0	0	0	0	0	416	0	0	558	0
Lane Group Flow (vph)	0	0	0	0	0	0	0	462	0	0	620	0
Turn Type				custom		custom			Perm	Prot		
Protected Phases								2		1	6	
Permitted Phases				8		8			2			
Total Split (s)	0.0	0.0	0.0	25.0	0.0	25.0	0.0	23.0	23.0	17.0	40.0	0.0
Act Effct Green (s)								65.0			65.0	
Actuated g/C Ratio								1.00			1.00	
v/c Ratio								0.13			0.33	
Uniform Delay, d1								0.0			0.0	
Delay								0.0			1.7	
LOS								A			A	
Approach Delay					0.0			0.0			1.7	
Approach LOS					A			A			A	
Queue Length 50th (ft)								0			28	
Queue Length 95th (ft)								0			126	
Internal Link Dist (ft)		172			369			465			938	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)												
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 28 (43%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.33
Intersection Signal Delay: 1.0 Intersection LOS: A
Intersection Capacity Utilization 36.0% ICU Level of Service A

Splits and Phases: 4: Wellness Way & Deer Valley Road

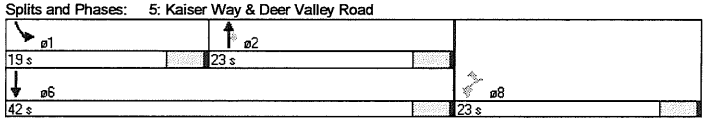


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	0	0	0	1770	0	1583	0	3539	1583	1770	1863	0
Flt Permitted				0.950						0.950		
Satd. Flow (perm)	0	0	0	1770	0	1583	0	3539	1583	1770	1863	0
Satd. Flow (RTOR)						21			40			
Volume (vph)	0	0	0	8	0	19	0	397	36	158	400	0
Lane Group Flow (vph)	0	0	0	9	0	21	0	441	40	176	444	0
Turn Type				custom		custom			Perm	Prot		
Protected Phases								2		1	6	
Permitted Phases				8		8			2			
Total Split (s)	0.0	0.0	0.0	23.0	0.0	23.0	0.0	23.0	23.0	19.0	42.0	0.0
Act Effct Green (s)				6.9		6.9		42.5	42.5	12.3	59.6	
Actuated g/C Ratio				0.11		0.11		0.65	0.65	0.19	0.92	
v/c Ratio				0.05		0.11		0.19	0.04	0.53	0.26	
Uniform Delay, d1				29.1		0.0		5.4	0.0	23.7	0.9	
Delay				25.8		12.5		6.1	3.2	18.0	3.3	
LOS				C		B		A	A	B	A	
Approach Delay					16.5			5.8			7.5	
Approach LOS					B			A			A	
Queue Length 50th (ft)				3		0		23	0	55	0	
Queue Length 95th (ft)				15		18		75	13	99	226	
Internal Link Dist (ft)		197			305			523			465	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)						90			480	220		
50th Bay Block Time %												
95th Bay Block Time %											12%	
Queuing Penalty (veh)											11	

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 16 (25%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.53
Intersection Signal Delay: 7.0 Intersection LOS: A
Intersection Capacity Utilization 35.3% ICU Level of Service A

Splits and Phases: 5: Kaiser Way & Deer Valley Road

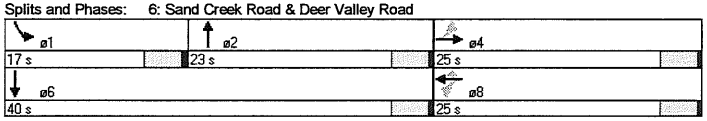


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	0	1863	0	0	1863	1863	0	1863	0	1863	1863	0
Flt Permitted												
Satd. Flow (perm)	0	1863	0	0	1863	1863	0	1863	0	1863	1863	0
Satd. Flow (RTOR)												
Volume (vph)	0	0	0	0	0	0	0	433	0	0	408	0
Lane Group Flow (vph)	0	0	0	0	0	0	0	481	0	0	453	0
Turn Type	Perm			Perm		Perm				Prot		
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8		8						
Total Split (s)	25.0	25.0	0.0	25.0	25.0	25.0	0.0	23.0	0.0	17.0	40.0	0.0
Act Effct Green (s)								65.0			65.0	
Actuated g/C Ratio								1.00			1.00	
v/c Ratio								0.26			0.24	
Uniform Delay, d1								0.0			0.0	
Delay								0.0			0.0	
LOS								A			A	
Approach Delay		0.0			0.0			0.0			0.0	
Approach LOS		A			A			A			A	
Queue Length 50th (ft)								0			0	
Queue Length 95th (ft)								0			0	
Internal Link Dist (ft)		412			10527			602			523	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)												
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 16 (25%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.26
Intersection Signal Delay: 0.0 Intersection LOS: A
Intersection Capacity Utilization 28.7% ICU Level of Service A

Splits and Phases: 6: Sand Creek Road & Deer Valley Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (veh/h)	121	30	0	0	47	6	0	0	0	13	0	108
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (veh/h)	134	33	0	0	52	7	0	0	0	14	0	120

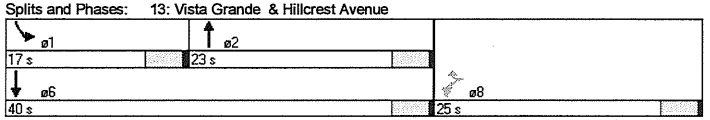
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	SB 2
Volume Total (vph)	134	33	52	7	14	120
Volume Left (vph)	134	0	0	0	14	0
Volume Right (vph)	0	0	0	7	0	120
Hadj (s)	0.2	0.0	0.0	-0.6	0.2	-0.6
Departure Headway (s)	5.1	4.9	5.0	4.4	5.3	4.5
Degree Utilization, x	0.19	0.05	0.07	0.01	0.02	0.15
Capacity (veh/h)	690	711	693	787	651	764
Control Delay (s)	8.1	6.9	7.2	6.2	7.2	7.1
Approach Delay (s)	7.9		7.1		7.1	
Approach LOS	A		A		A	

Intersection Summary				
Delay	7.4			
HCM Level of Service	A			
Intersection Capacity Utilization	24.1%	ICU Level of Service	A	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	0	0	0	1770	0	1583	0	3337	0	1770	3539	0
Flt Permitted				0.950						0.950		
Satd. Flow (perm)	0	0	0	1770	0	1583	0	3337	0	1770	3539	0
Satd. Flow (RTOR)						62		54				
Volume (vph)	0	0	0	55	0	56	0	80	49	55	70	0
Lane Group Flow (vph)	0	0	0	61	0	62	0	143	0	61	78	0
Turn Type				custom		custom				Prot		
Protected Phases								2		1	6	
Permitted Phases				8		8						
Total Split (s)	0.0	0.0	0.0	25.0	0.0	25.0	0.0	23.0	0.0	17.0	40.0	0.0
Act Effct Green (s)				8.5		8.5		45.3		8.7	53.0	
Actuated g/C Ratio				0.13		0.13		0.70		0.13	0.82	
v/c Ratio				0.26		0.24		0.06		0.26	0.03	
Uniform Delay, d1				26.4		0.0		2.5		27.4	1.4	
Delay				25.0		7.8		4.2		36.1	0.6	
LOS				C		A		A		D	A	
Approach Delay					16.3			4.2			16.2	
Approach LOS					B			A			B	
Queue Length 50th (ft)				22		0		6		35	1	
Queue Length 95th (ft)				51		28		20		65	3	
Internal Link Dist (ft)		216			502			954			614	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)				100						195		
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary			
Cycle Length: 65			
Actuated Cycle Length: 65			
Offset: 16 (25%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.26			
Intersection Signal Delay: 12.0		Intersection LOS: B	
Intersection Capacity Utilization 21.0%		ICU Level of Service A	

Splits and Phases: 13: Vista Grande & Hillcrest Avenue

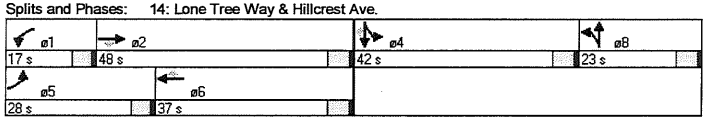


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3477	0	*1900	3258	1583
Flt Permitted	0.950			0.950			0.950			0.950	0.961	
Satd. Flow (perm)	1770	3539	1558	1767	3539	1583	1770	3477	0	1605	3249	1583
Satd. Flow (RTOR)			20			411		9				338
Volume (vph)	171	640	17	37	857	525	45	73	9	710	83	294
Lane Group Flow (vph)	201	753	20	40	922	565	61	111	0	408	503	338
Turn Type	Prot		Perm	Prot		Perm	Split			Split		Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases			2			6						4
Total Split (s)	28.0	48.0	48.0	17.0	37.0	37.0	23.0	23.0	0.0	42.0	42.0	42.0
Act Effct Green (s)	20.4	62.6	62.6	9.8	49.9	49.9	12.7	12.7		35.0	35.0	35.0
Actuated g/C Ratio	0.16	0.48	0.48	0.08	0.38	0.38	0.10	0.10		0.27	0.27	0.27
v/c Ratio	0.72	0.44	0.03	0.30	0.68	0.66	0.35	0.32		0.80	0.90dl	0.50
Uniform Delay, d1	52.1	22.8	0.0	58.0	33.4	7.7	54.8	50.1		44.2	41.0	0.0
Delay	43.3	20.6	11.0	72.0	31.2	8.3	58.2	53.3		43.9	40.6	3.6
LOS	D	C	B	E	C	A	E	D		D	D	A
Approach Delay		25.1			23.8			55.1			31.7	
Approach LOS		C			C			E			C	
Queue Length 50th (ft)	166	243	4	36	325	51	51	45		342	196	0
Queue Length 95th (ft)	m154	m323	m3	m62	#554	422	80	62		448	241	59
Internal Link Dist (ft)		945			1420			712			1705	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	350			210		210	195			200		290
50th Bay Block Time %					10%					28%		
95th Bay Block Time %					38%	12%				38%	10%	
Queuing Penalty (veh)					9	27				83	21	

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 78 (60%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.80
Intersection Signal Delay: 28.0 Intersection LOS: C
Intersection Capacity Utilization 75.9% ICU Level of Service C
* User Entered Value
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.
dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 14: Lone Tree Way & Hillcrest Ave.

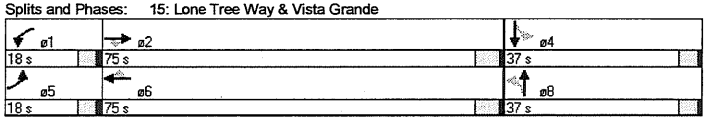


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1650	0	1770	1688	0
Flt Permitted	0.950			0.950			0.698			0.571		
Satd. Flow (perm)	1770	3539	1547	1769	3539	1583	1300	1650	0	1064	1688	0
Satd. Flow (RTOR)			13			8		105			42	
Volume (vph)	50	1280	34	42	1359	24	76	29	92	38	18	30
Lane Group Flow (vph)	56	1422	38	45	1461	26	86	138	0	54	67	0
Turn Type	Prot		Perm	Prot		Perm	Perm			Perm		
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2			6	8			4		
Total Split (s)	18.0	75.0	75.0	18.0	75.0	75.0	37.0	37.0	0.0	37.0	37.0	0.0
Act Effct Green (s)	11.1	98.0	98.0	10.2	97.3	97.3	14.8	14.8		14.8	14.8	
Actuated g/C Ratio	0.09	0.75	0.75	0.08	0.75	0.75	0.11	0.11		0.11	0.11	
v/c Ratio	0.37	0.53	0.03	0.32	0.55	0.02	0.58	0.49		0.45	0.29	
Uniform Delay, d1	57.3	6.9	2.8	57.7	7.4	3.0	54.6	12.5		53.7	19.3	
Delay	59.4	13.0	7.6	54.2	3.7	2.9	53.7	15.4		52.5	22.9	
LOS	E	B	A	D	A	A	D	B		D	C	
Approach Delay		14.6			5.2			30.1			36.1	
Approach LOS		B			A			C			D	
Queue Length 50th (ft)	48	155	5	38	105	0	70	26		43	19	
Queue Length 95th (ft)	m85	733	m26	m79	133	m1	118	82		65	42	
Internal Link Dist (ft)		1420			1055			786			614	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	200		75	200		75	130			100		
50th Bay Block Time %												
95th Bay Block Time %		30%										
Queuing Penalty (veh)		8										

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 55 (42%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.58
Intersection Signal Delay: 12.1 Intersection LOS: B
Intersection Capacity Utilization 58.5% ICU Level of Service A
m Volume for 95th percentile queue is metered by upstream signal.

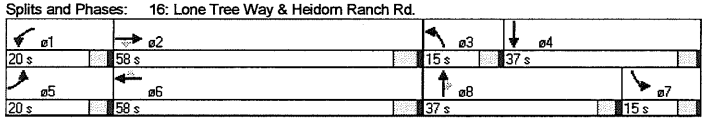
Splits and Phases: 15: Lone Tree Way & Vista Grande



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	3433	1863	1583	1770	1583	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	3433	1863	1583	1770	1583	0
Satd. Flow (RTOR)			26			2			42		247	
Volume (vph)	3	1317	67	26	1317	5	61	1	21	8	0	1
Lane Group Flow (vph)	3	1344	68	30	1497	6	122	2	42	17	2	0
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			
Total Split (s)	20.0	58.0	58.0	20.0	58.0	58.0	15.0	37.0	37.0	15.0	37.0	0.0
Act Effct Green (s)	7.4	100.3	100.3	10.2	106.7	106.7	12.7	9.8	9.8	9.2	7.9	
Actuated g/C Ratio	0.06	0.77	0.77	0.08	0.82	0.82	0.10	0.08	0.08	0.07	0.06	
v/c Ratio	0.03	0.49	0.06	0.22	0.52	0.00	0.36	0.01	0.27	0.13	0.01	
Uniform Delay, d1	62.3	7.7	3.0	58.8	6.2	2.3	54.9	55.5	0.0	59.7	0.0	
Delay	64.0	4.1	2.5	68.4	0.8	0.4	54.4	56.0	16.7	56.2	0.0	
LOS	E	A	A	E	A	A	D	E	B	E	A	
Approach Delay		4.1			2.2			44.8			50.3	
Approach LOS		A			A			D			D	
Queue Length 50th (ft)	2	179	1	26	8	0	51	2	0	14	0	
Queue Length 95th (ft)	m6	66	4	m46	61	m0	45	6	6	20	0	
Internal Link Dist (ft)		1055			905			446			316	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	185		115	400		95	200		200	50		
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 55 (42%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.52
Intersection Signal Delay: 5.6 Intersection LOS: A
Intersection Capacity Utilization 58.2% ICU Level of Service A
m Volume for 95th percentile queue is metered by upstream signal.

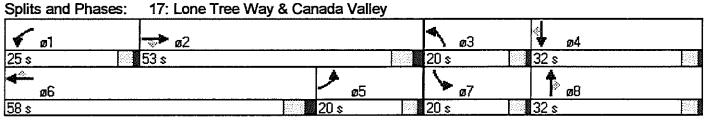
Splits and Phases: 16: Lone Tree Way & Heidorn Ranch Rd.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	5085	1583	3433	3539	1583	3433	1651	1504	1770	1863	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	5085	1583	3433	3539	1583	3433	1651	1504	1770	1863	1583
Satd. Flow (RTOR)			87			117		29	83			59
Volume (vph)	54	1272	84	240	1203	140	38	33	84	333	47	53
Lane Group Flow (vph)	56	1311	87	261	1308	152	55	87	83	370	52	59
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Total Split (s)	20.0	53.0	53.0	25.0	58.0	58.0	20.0	32.0	32.0	20.0	32.0	32.0
Act Effct Green (s)	17.0	77.2	77.2	13.9	78.2	78.2	7.5	9.8	9.8	17.0	21.1	21.1
Actuated g/C Ratio	0.13	0.59	0.59	0.11	0.60	0.60	0.06	0.08	0.08	0.13	0.16	0.16
v/c Ratio	0.24	0.43	0.09	0.71	0.61	0.15	0.28	0.57	0.44	1.60	0.17	0.19
Uniform Delay, d1	53.6	14.8	0.0	56.1	17.4	2.6	59.6	37.9	0.0	56.5	46.9	0.0
Delay	35.3	4.8	0.5	57.2	11.2	0.4	58.3	38.4	11.2	223.6	47.9	11.5
LOS	D	A	A	E	B	A	E	D	B	F	D	B
Approach Delay		5.7			17.2			33.2			178.6	
Approach LOS		A			B			C			F	
Queue Length 50th (ft)	49	131	4	100	394	0	23	50	0	~445	39	0
Queue Length 95th (ft)	75	75	0	141	445	m8	34	73	24	#643	77	40
Internal Link Dist (ft)		905			760			542			1064	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	320		630	400		350	150					
50th Bay Block Time %												
95th Bay Block Time %					6%							
Queuing Penalty (veh)					8							

Intersection Summary
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 37 (28%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.60
Intersection Signal Delay: 33.8 Intersection LOS: C
Intersection Capacity Utilization 76.6% ICU Level of Service C
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 17: Lone Tree Way & Canada Valley

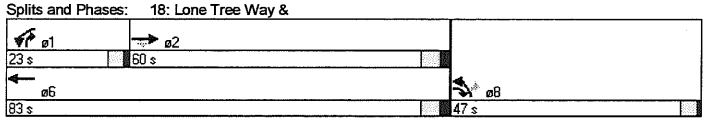


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	0	3539	1583	1770	3539	0	3433	0	1583	0	0	0
Flt Permitted				0.950			0.950					
Satd. Flow (perm)	0	3539	1583	1770	3539	0	3420	0	1583	0	0	0
Satd. Flow (RTOR)			183						92			
Volume (vph)	0	702	830	182	824	0	781	0	147	0	0	0
Lane Group Flow (vph)	0	816	965	209	947	0	840	0	158	0	0	0
Turn Type			pm+ov	Prot			Prot		custom			
Protected Phases		2	8	1	6		8		1			
Permitted Phases			2						8 1			
Total Split (s)	0.0	60.0	47.0	23.0	83.0	0.0	47.0	0.0	23.0	0.0	0.0	0.0
Act Effct Green (s)		65.5	105.2	18.8	87.3		36.7		58.5			
Actuated g/C Ratio		0.50	0.81	0.14	0.67		0.28		0.45			
v/c Ratio		0.46	0.73	0.82	0.40		0.87		0.21			
Uniform Delay, d1		20.8	4.3	53.9	9.6		44.3		8.6			
Delay		20.3	11.5	59.3	9.9		43.8		8.0			
LOS		C	B	E	A		D		A			
Approach Delay		15.5			18.9			38.1				
Approach LOS		B			B			D				
Queue Length 50th (ft)		276	627	171	178		344		30			
Queue Length 95th (ft)		m206	m168	#271	243		393		65			
Internal Link Dist (ft)		760			760			536			369	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)			400	310			150					
50th Bay Block Time %			12%				41%					
95th Bay Block Time %			1%				42%					
Queuing Penalty (veh)			24				132					

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 72 (55%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.87
Intersection Signal Delay: 22.2 Intersection LOS: C
Intersection Capacity Utilization 78.0% ICU Level of Service C
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 18: Lone Tree Way &

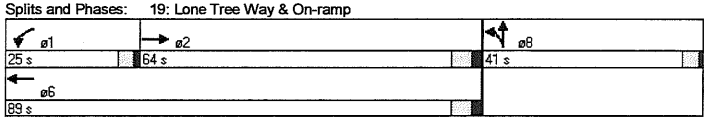


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	0	3532	0	1770	3539	0	0	1706	0	0	0	0
Flt Permitted				0.950				0.973				
Satd. Flow (perm)	0	3532	0	1770	3539	0	0	1706	0	0	0	0
Satd. Flow (RTOR)		1						7				
Volume (vph)	0	838	11	12	1002	0	4	0	3	0	0	0
Lane Group Flow (vph)	0	999	0	14	1139	0	0	16	0	0	0	0
Turn Type				Prot			Split					
Protected Phases		2		1	6		8	8				
Permitted Phases												
Total Split (s)	0.0	64.0	0.0	25.0	89.0	0.0	41.0	41.0	0.0	0.0	0.0	0.0
Act Effct Green (s)		120.4		6.5	124.7			6.3				
Actuated g/C Ratio		0.93		0.05	0.96			0.05				
v/c Ratio		0.31		0.16	0.34			0.18				
Uniform Delay, d1		1.4		61.9	0.5			34.8				
Delay		0.9		58.8	0.5			42.0				
LOS		A		E	A			D				
Approach Delay		0.9			1.2			42.0				
Approach LOS		A			A			D				
Queue Length 50th (ft)		8		12	0			7				
Queue Length 95th (ft)		37		33	55			12				
Internal Link Dist (ft)		760			620			935			1156	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)				280								
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 88 (68%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.34
Intersection Signal Delay: 1.3 Intersection LOS: A
Intersection Capacity Utilization 41.5% ICU Level of Service A

Splits and Phases: 19: Lone Tree Way & On-ramp

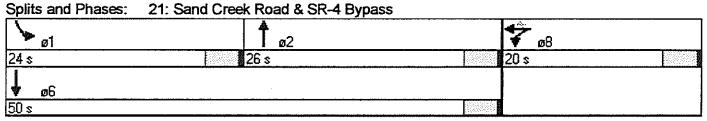


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	0	0	0	0	1770	1583	0	3412	0	1770	3539	0
Flt Permitted					0.950					0.950		
Satd. Flow (perm)	0	0	0	0	1770	1583	0	3412	0	1770	3539	0
Satd. Flow (RTOR)						516		64				
Volume (vph)	0	0	0	239	0	464	0	695	219	395	557	0
Lane Group Flow (vph)	0	0	0	0	266	516	0	1015	0	439	619	0
Turn Type				Split		Perm				Prot		
Protected Phases				8	8			2		1	6	
Permitted Phases						8						
Total Split (s)	0.0	0.0	0.0	20.0	20.0	20.0	0.0	26.0	0.0	24.0	50.0	0.0
Act Effct Green (s)					17.0	17.0		23.0		21.0	47.0	
Actuated g/C Ratio					0.24	0.24		0.33		0.30	0.67	
v/c Ratio					0.62	0.67		0.87		0.83	0.26	
Uniform Delay, d1					23.6	0.0		20.6		22.8	4.6	
Delay					24.3	2.7		24.8		29.7	4.6	
LOS					C	A		C		C	A	
Approach Delay					10.1			24.8			15.1	
Approach LOS					B			C			B	
Queue Length 50th (ft)					102	0		201		175	46	
Queue Length 95th (ft)					175	73		#313		#322	66	
Internal Link Dist (ft)		10527			352			669			5563	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)						420				620		
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 70
Offset: 16 (23%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Control Type: Pretimed
Maximum v/c Ratio: 0.87
Intersection Signal Delay: 17.2 Intersection LOS: B
Intersection Capacity Utilization 78.1% ICU Level of Service C
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 21: Sand Creek Road & SR-4 Bypass

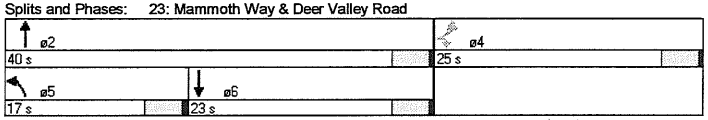


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	0	1583	0	0	0	1770	3539	0	0	3514	0
Flt Permitted	0.950						0.950					
Satd. Flow (perm)	1770	0	1583	0	0	0	1770	3539	0	0	3514	0
Satd. Flow (RTOR)			22								8	
Volume (vph)	81	0	20	0	0	0	10	366	0	0	400	20
Lane Group Flow (vph)	90	0	22	0	0	0	11	407	0	0	466	0
Turn Type	custom		custom				Prot					
Protected Phases							5	2			6	
Permitted Phases	4		4									
Total Split (s)	25.0	0.0	25.0	0.0	0.0	0.0	17.0	40.0	0.0	0.0	23.0	0.0
Act Effct Green (s)	9.3		9.3				7.0	52.2			50.0	
Actuated g/C Ratio	0.14		0.14				0.11	0.80			0.77	
v/c Ratio	0.35		0.09				0.06	0.14			0.17	
Uniform Delay, d1	26.1		0.0				30.3	1.7			3.3	
Delay	24.5		10.6				18.3	5.8			7.3	
LOS	C		B				B	A			A	
Approach Delay		21.8						6.2			7.3	
Approach LOS		C						A			A	
Queue Length 50th (ft)	33		0				3	0			11	
Queue Length 95th (ft)	67		16				17	102			152	
Internal Link Dist (ft)		316			261			938			970	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)												
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 16 (25%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.35
Intersection Signal Delay: 8.4 Intersection LOS: A
Intersection Capacity Utilization 24.6% ICU Level of Service A

Splits and Phases: 23: Mammoth Way & Deer Valley Road



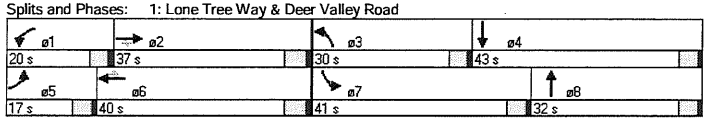
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	3433	3394	0	*2000	3504	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	3433	3394	0	1770	3504	0
Satd. Flow (RTOR)			52			77		39			6	
Volume (vph)	122	1003	182	160	802	210	221	306	115	230	302	22
Lane Group Flow (vph)	144	1180	214	198	990	259	257	490	0	354	499	0
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6						
Total Split (s)	17.0	37.0	37.0	20.0	40.0	40.0	30.0	32.0	0.0	41.0	43.0	0.0
Act Effct Green (s)	13.6	48.5	48.5	16.7	51.6	51.6	16.4	24.1		28.8	36.5	
Actuated g/C Ratio	0.10	0.37	0.37	0.13	0.40	0.40	0.13	0.19		0.22	0.28	
v/c Ratio	0.78	0.89	0.34	0.88	0.71	0.38	0.60	0.74		0.80	0.51	
Uniform Delay, d1	56.7	38.2	21.6	55.7	32.8	18.9	53.7	45.9		47.8	38.7	
Delay	66.1	69.9	25.1	78.6	26.6	5.1	56.8	50.9		47.1	37.8	
LOS	E	E	C	E	C	A	E	D		D	D	
Approach Delay		63.3			29.8			52.9			41.7	
Approach LOS		E			C			D			D	
Queue Length 50th (ft)	120	490	96	143	412	35	114	207		285	182	
Queue Length 95th (ft)	#203	#721	178	#235	478	81	113	258		243	148	
Internal Link Dist (ft)		900			1588			664			709	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	195		75	195		75	180			150		
50th Bay Block Time %		38%	17%		10%	1%		11%		39%	14%	
95th Bay Block Time %	8%	58%	44%	24%	12%	5%		28%		30%	1%	
Queuing Penalty (veh)	24	69	178	59	22	12		49		86	24	

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 54 (42%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.89
Intersection Signal Delay: 47.0 Intersection LOS: D
Intersection Capacity Utilization 90.6% ICU Level of Service E

* User Entered Value
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Lone Tree Way & Deer Valley Road



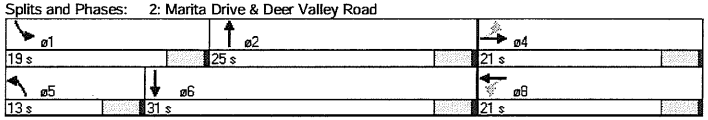
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	1583	0	1770	1591	0	1770	3536	0	1770	3522	0
Flt Permitted	0.625			0.754			0.950			0.950		
Satd. Flow (perm)	1164	1583	0	1405	1591	0	1770	3536	0	1770	3522	0
Satd. Flow (RTOR)		414			140			1			7	
Volume (vph)	11	0	5	36	4	126	14	577	5	32	587	21
Lane Group Flow (vph)	12	6	0	40	144	0	16	647	0	36	675	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Total Split (s)	21.0	21.0	0.0	21.0	21.0	0.0	13.0	25.0	0.0	19.0	31.0	0.0
Act Effct Green (s)	8.4	8.4		8.4	8.4		7.2	50.7		7.4	50.8	
Actuated g/C Ratio	0.13	0.13		0.13	0.13		0.11	0.78		0.11	0.78	
v/c Ratio	0.08	0.01		0.22	0.44		0.08	0.23		0.18	0.25	
Uniform Delay, d1	25.9	0.0		26.3	0.7		30.3	3.4		30.5	3.3	
Delay	23.8	0.0		24.8	5.9		31.5	0.8		25.5	3.4	
LOS	C	A		C	A		C	A		C	A	
Approach Delay		15.9			10.0			1.5			4.5	
Approach LOS		B			A			A			A	
Queue Length 50th (ft)	4	0		15	1		6	3		18	1	
Queue Length 95th (ft)	17	0		38	44		m25	14		m36	m92	
Internal Link Dist (ft)		346			300			2263			664	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	40			100			175			125		
50th Bay Block Time %												
95th Bay Block Time %											8%	
Queuing Penalty (veh)											1	

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 16 (25%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.44
Intersection Signal Delay: 4.0 Intersection LOS: A
Intersection Capacity Utilization 34.3% ICU Level of Service A

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Marita Drive & Deer Valley Road

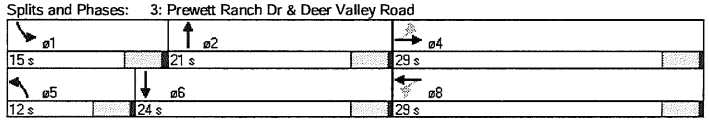


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	1779	0	1770	1732	0	1770	3476	0	1770	3440	0
Flt Permitted	0.579			0.642			0.950			0.950		
Satd. Flow (perm)	1079	1779	0	1196	1732	0	1770	3476	0	1770	3440	0
Satd. Flow (RTOR)		40			81			23			44	
Volume (vph)	74	97	42	18	99	86	89	414	57	139	392	88
Lane Group Flow (vph)	82	155	0	20	206	0	99	523	0	154	534	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Total Split (s)	29.0	29.0	0.0	29.0	29.0	0.0	12.0	21.0	0.0	15.0	24.0	0.0
Act Effct Green (s)	10.8	10.8		10.8	10.8		8.4	36.5		10.8	38.7	
Actuated g/C Ratio	0.17	0.17		0.17	0.17		0.13	0.56		0.17	0.60	
v/c Ratio	0.46	0.47		0.10	0.58		0.43	0.27		0.52	0.26	
Uniform Delay, d1	24.4	17.9		22.9	14.8		27.1	7.4		25.9	6.0	
Delay	23.5	17.2		21.1	14.5		24.3	4.2		15.9	13.3	
LOS	C	B		C	B		C	A		B	B	
Approach Delay		19.4			15.1			7.4			13.9	
Approach LOS		B			B			A			B	
Queue Length 50th (ft)	30	41		7	45		31	0		66	120	
Queue Length 95th (ft)	63	82		22	95		87	27		12	141	
Internal Link Dist (ft)		416			350			970			2263	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	155			80			140			140		
50th Bay Block Time %												
95th Bay Block Time %					19%						1%	
Queuing Penalty (veh)					2							

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 16 (25%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.58
Intersection Signal Delay: 12.5 — Intersection LOS: B
Intersection Capacity Utilization 52.8% — ICU Level of Service A

Splits and Phases: 3: Prewett Ranch Dr & Deer Valley Road

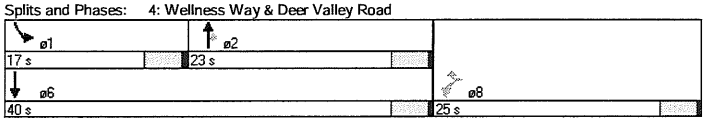


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	0	0	0	1863	0	1863	0	3539	1863	1863	1863	0
Flt Permitted												
Satd. Flow (perm)	0	0	0	1863	0	1863	0	3539	1863	1863	1863	0
Satd. Flow (RTOR)												
Volume (vph)	0	0	0	0	0	0	0	606	0	0	425	0
Lane Group Flow (vph)	0	0	0	0	0	0	0	673	0	0	472	0
Turn Type				custom		custom			Perm	Prot		
Protected Phases								2		1	6	
Permitted Phases				8		8			2			
Total Split (s)	0.0	0.0	0.0	25.0	0.0	25.0	0.0	23.0	23.0	17.0	40.0	0.0
Act Effct Green (s)								65.0			65.0	
Actuated g/C Ratio								1.00			1.00	
v/c Ratio								0.19			0.25	
Uniform Delay, d1								0.0			0.0	
Delay								0.0			1.6	
LOS								A			A	
Approach Delay					0.0			0.0			1.6	
Approach LOS					A			A			A	
Queue Length 50th (ft)								0			20	
Queue Length 95th (ft)								0			5	
Internal Link Dist (ft)		172			369			465			957	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)												
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 28 (43%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.25
Intersection Signal Delay: 0.6 — Intersection LOS: A
Intersection Capacity Utilization 28.2% — ICU Level of Service A

Splits and Phases: 4: Wellness Way & Deer Valley Road

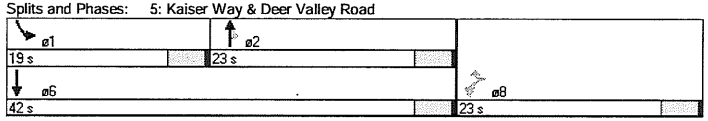


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	0	0	0	1770	0	1583	0	3539	1583	1770	1863	0
Flt Permitted				0.950						0.950		
Satd. Flow (perm)	0	0	0	1770	0	1583	0	3539	1583	1770	1863	0
Satd. Flow (RTOR)						122			17			
Volume (vph)	0	0	0	47	0	110	0	496	15	44	381	0
Lane Group Flow (vph)	0	0	0	52	0	122	0	551	17	49	423	0
Turn Type				custom		custom			Perm	Prot		
Protected Phases								2		1	6	
Permitted Phases				8		8			2			
Total Split (s)	0.0	0.0	0.0	23.0	0.0	23.0	0.0	23.0	23.0	19.0	42.0	0.0
Act Effct Green (s)				8.3		8.3		48.3	48.3	7.8	53.2	
Actuated g/C Ratio				0.13		0.13		0.74	0.74	0.12	0.82	
v/c Ratio				0.23		0.40		0.21	0.01	0.23	0.28	
Uniform Delay, d1				26.5		0.0		3.8	0.0	29.1	1.7	
Delay				25.0		6.0		4.5	3.2	31.8	0.1	
LOS				C		A		A	A	C	A	
Approach Delay					11.7			4.5			3.4	
Approach LOS					B			A			A	
Queue Length 50th (ft)				19		0		19	0	15	1	
Queue Length 95th (ft)				46		39		78	m6	33	1	
Internal Link Dist (ft)		197			305			523			465	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)						90			480	220		
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 16 (25%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.40
Intersection Signal Delay: 5.1 Intersection LOS: A
Intersection Capacity Utilization 32.3% ICU Level of Service A
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Kaiser Way & Deer Valley Road

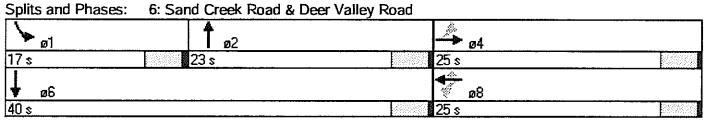


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	0	1863	0	0	1863	1863	0	1863	0	1863	1863	0
Flt Permitted												
Satd. Flow (perm)	0	1863	0	0	1863	1863	0	1863	0	1863	1863	0
Satd. Flow (RTOR)												
Volume (vph)	0	0	0	0	0	0	0	511	0	0	428	0
Lane Group Flow (vph)	0	0	0	0	0	0	0	568	0	0	476	0
Turn Type	Perm			Perm		Perm					Prot	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8		8						
Total Split (s)	25.0	25.0	0.0	25.0	25.0	25.0	0.0	23.0	0.0	17.0	40.0	0.0
Act Effct Green (s)								65.0			65.0	
Actuated g/C Ratio								1.00			1.00	
v/c Ratio								0.30			0.26	
Uniform Delay, d1								0.0			0.0	
Delay								0.0			0.0	
LOS								A			A	
Approach Delay		0.0			0.0			0.0			0.0	
Approach LOS		A			A			A			A	
Queue Length 50th (ft)								0			0	
Queue Length 95th (ft)								0			0	
Internal Link Dist (ft)		412			10527			602			523	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)												
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 16 (25%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.30
Intersection Signal Delay: 0.0 Intersection LOS: A
Intersection Capacity Utilization 33.2% ICU Level of Service A

Splits and Phases: 6: Sand Creek Road & Deer Valley Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (veh/h)	124	24	0	0	11	11	0	0	0	22	0	134
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (veh/h)	138	27	0	0	12	12	0	0	0	24	0	149

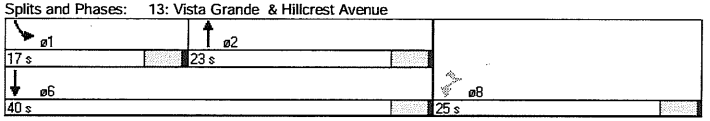
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	SB 2
Volume Total (vph)	138	27	12	12	24	149
Volume Left (vph)	138	0	0	0	24	0
Volume Right (vph)	0	0	0	12	0	149
Hadj (s)	0.2	0.0	0.0	-0.6	0.2	-0.6
Departure Headway (s)	5.1	4.9	5.1	4.5	5.2	4.4
Degree Utilization, x	0.20	0.04	0.02	0.02	0.04	0.18
Capacity (veh/h)	671	700	676	766	664	784
Control Delay (s)	8.2	6.9	7.0	6.3	7.2	7.2
Approach Delay (s)	8.0		6.7		7.2	
Approach LOS	A		A		A	

Intersection Summary				
Delay	7.5			
HCM Level of Service	A			
Intersection Capacity Utilization	24.3%	ICU Level of Service	A	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	0	0	0	1770	0	1583	0	3309	0	1770	3539	0
Flt Permitted				0.950						0.950		
Satd. Flow (perm)	0	0	0	1770	0	1583	0	3309	0	1770	3539	0
Satd. Flow (RTOR)						32		68				
Volume (vph)	0	0	0	50	0	29	0	80	61	60	100	0
Lane Group Flow (vph)	0	0	0	56	0	32	0	157	0	67	111	0
Turn Type				custom		custom				Prot		
Protected Phases								2		1	6	
Permitted Phases				8		8						
Total Split (s)	0.0	0.0	0.0	25.0	0.0	25.0	0.0	23.0	0.0	17.0	40.0	0.0
Act Effct Green (s)				8.2		8.2		47.9		9.0	55.8	
Actuated g/C Ratio				0.13		0.13		0.74		0.14	0.86	
v/c Ratio				0.25		0.14		0.06		0.27	0.04	
Uniform Delay, d1				27.6		0.0		2.1		27.4	1.1	
Delay				25.1		10.0		3.8		37.0	0.4	
LOS				C		A		A		D	A	
Approach Delay					19.6			3.8			14.2	
Approach LOS					B			A			B	
Queue Length 50th (ft)				20		0		6		37	2	
Queue Length 95th (ft)				48		21		21		m66	3	
Internal Link Dist (ft)		216			502			954			614	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)				100						195		
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary
Cycle Length: 65
Actuated Cycle Length: 65
Offset: 16 (25%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.27
Intersection Signal Delay: 11.5 Intersection LOS: B
Intersection Capacity Utilization 21.7% ICU Level of Service A
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 13: Vista Grande & Hillcrest Avenue



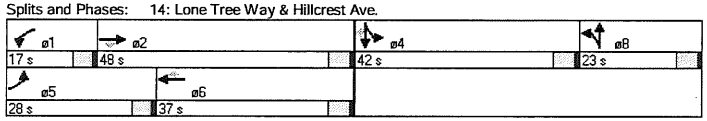
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3379	0	*1900	3258	1583
Flt Permitted	0.950			0.950			0.950			0.950	0.961	
Satd. Flow (perm)	1770	3539	1558	1768	3539	1583	1770	3379	0	1605	3249	1583
Satd. Flow (RTOR)			15			438		27				86
Volume (vph)	169	1060	18	49	927	606	39	53	20	788	96	75
Lane Group Flow (vph)	199	1247	21	53	997	652	53	99	0	453	563	86
Turn Type	Prot		Perm	Prot		Perm	Split			Split		Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases			2			6						4
Total Split (s)	28.0	48.0	48.0	17.0	37.0	37.0	23.0	23.0	0.0	42.0	42.0	42.0
Act Effct Green (s)	20.3	61.1	61.1	10.6	49.4	49.4	12.2	12.2		36.1	36.1	36.1
Actuated g/C Ratio	0.16	0.47	0.47	0.08	0.38	0.38	0.09	0.09		0.28	0.28	0.28
v/c Ratio	0.72	0.75	0.03	0.37	0.74	0.75	0.32	0.29		0.86	0.97dl	0.17
Uniform Delay, d1	52.1	28.9	5.4	57.6	34.8	10.1	55.0	39.6		44.5	41.0	0.0
Delay	37.8	44.2	17.8	65.2	35.8	15.1	58.5	43.1		46.3	40.7	6.8
LOS	D	D	B	E	D	B	E	D		D	D	A
Approach Delay		42.9			28.8			48.5			40.4	
Approach LOS		D			C			D			D	
Queue Length 50th (ft)	164	566	8	47	315	0	45	32		385	220	0
Queue Length 95th (ft)	m192	#663	m9	m83	#622	#244	73	49		507	272	36
Internal Link Dist (ft)		945			1420			712			1705	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	350			210		210	195			200		290
50th Bay Block Time %		33%			10%					33%	5%	
95th Bay Block Time %		43%			48%	17%				42%	17%	
Queuing Penalty (veh)		75			15	43				104	50	

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 78 (60%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.86
Intersection Signal Delay: 37.0 Intersection LOS: D
Intersection Capacity Utilization 80.3% ICU Level of Service D

* User Entered Value
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.
dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 14: Lone Tree Way & Hillcrest Ave.

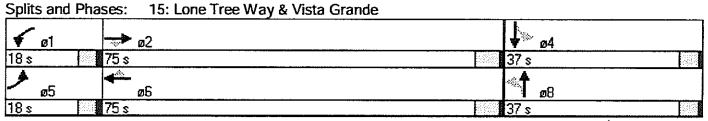


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1637	0	1770	1650	0
Flt Permitted	0.950			0.950			0.715			0.535		
Satd. Flow (perm)	1770	3539	1547	1769	3539	1583	1332	1637	0	997	1650	0
Satd. Flow (RTOR)			17			12		128			44	
Volume (vph)	41	1626	60	104	1483	37	41	27	113	23	10	31
Lane Group Flow (vph)	46	1807	67	112	1595	40	47	159	0	32	58	0
Turn Type	Prot		Perm	Prot		Perm	Perm			Perm		
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2			6	8			4		
Total Split (s)	18.0	75.0	75.0	18.0	75.0	75.0	37.0	37.0	0.0	37.0	37.0	0.0
Act Effct Green (s)	10.1	96.3	96.3	13.5	101.7	101.7	11.3	11.3		11.3	11.3	
Actuated g/C Ratio	0.08	0.74	0.74	0.10	0.78	0.78	0.09	0.09		0.09	0.09	
v/c Ratio	0.34	0.69	0.06	0.61	0.58	0.03	0.41	0.62		0.37	0.32	
Uniform Delay, d1	57.8	8.9	3.4	55.7	6.0	2.3	56.3	10.8		56.1	13.2	
Delay	54.0	20.0	7.8	48.7	4.9	4.0	55.2	14.6		55.0	20.8	
LOS	D	B	A	D	A	A	E	B		E	C	
Approach Delay		20.3			7.7			23.9			33.0	
Approach LOS		C			A			C			C	
Queue Length 50th (ft)	35	711	20	93	135	0	38	25		26	11	
Queue Length 95th (ft)	m47	0	m36	166	246	m5	75	88		46	34	
Internal Link Dist (ft)		1420			1055			786			614	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	200		75	200		75	130			100		
50th Bay Block Time %		24%										
95th Bay Block Time %					23%							
Queuing Penalty (veh)		5			13							

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 55 (42%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.69
Intersection Signal Delay: 15.2 Intersection LOS: B
Intersection Capacity Utilization 75.7% ICU Level of Service C
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 15: Lone Tree Way & Vista Grande

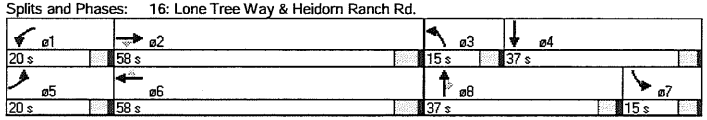


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	3433	1863	1583	1770	1863	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	3433	1863	1583	1770	1863	0
Satd. Flow (RTOR)			13			2			22			
Volume (vph)	3	1679	43	18	1519	7	79	1	11	7	0	0
Lane Group Flow (vph)	3	1713	44	20	1726	8	158	2	22	15	0	0
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			
Total Split (s)	20.0	58.0	58.0	20.0	58.0	58.0	15.0	37.0	37.0	15.0	37.0	0.0
Act Effct Green (s)	7.4	103.1	103.1	9.5	106.4	106.4	15.4	10.1	10.1	9.1		
Actuated g/C Ratio	0.06	0.79	0.79	0.07	0.82	0.82	0.12	0.08	0.08	0.07		
v/c Ratio	0.03	0.61	0.03	0.16	0.60	0.01	0.39	0.01	0.15	0.12		
Uniform Delay, d1	62.3	7.8	2.9	60.5	6.7	2.6	50.4	55.5	0.0	60.6		
Delay	60.7	3.2	1.9	58.1	1.3	0.9	51.6	56.0	21.5	56.3		
LOS	E	A	A	E	A	A	D	E	C	E		
Approach Delay		3.3			2.0			48.1			56.3	
Approach LOS		A			A			D			E	
Queue Length 50th (ft)	2	138	2	17	10	0	66	2	0	12		
Queue Length 95th (ft)	m4	95	m1	m26	111	m1	50	6	8	18		
Internal Link Dist (ft)		1055			905			446			316	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	185		115	400		95	200		200	50		
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 55 (42%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.61
Intersection Signal Delay: 5.1 Intersection LOS: A
Intersection Capacity Utilization 65.7% ICU Level of Service B
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 16: Lone Tree Way & Heidorn Ranch Rd.

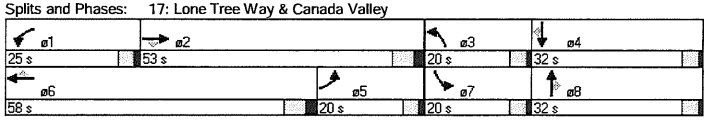


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	5085	1583	3433	3539	1583	3433	1639	1504	1770	1863	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	5085	1583	3433	3539	1583	3433	1639	1504	1770	1863	1583
Satd. Flow (RTOR)			96			188		34	199			60
Volume (vph)	67	1551	93	343	1332	183	112	61	196	346	66	54
Lane Group Flow (vph)	69	1599	96	373	1448	199	162	173	199	384	73	60
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Total Split (s)	20.0	53.0	53.0	25.0	58.0	58.0	20.0	32.0	32.0	20.0	32.0	32.0
Act Effct Green (s)	17.0	66.6	66.6	18.3	71.9	71.9	15.6	16.1	16.1	17.0	19.4	19.4
Actuated g/C Ratio	0.13	0.51	0.51	0.14	0.55	0.55	0.12	0.12	0.12	0.13	0.15	0.15
v/c Ratio	0.30	0.61	0.11	0.77	0.74	0.21	0.39	0.74	0.55	1.66	0.26	0.21
Uniform Delay, d1	54.0	23.1	0.0	53.8	23.2	0.8	52.8	43.3	0.0	56.5	49.9	0.0
Delay	35.8	11.4	1.5	52.7	15.6	0.6	54.7	43.0	6.4	234.3	46.6	10.6
LOS	D	B	A	D	B	A	D	D	A	F	D	B
Approach Delay		11.8			21.0			32.9			181.8	
Approach LOS		B			C			C			F	
Queue Length 50th (ft)	54	136	4	147	450	5	68	121	0	~470	54	0
Queue Length 95th (ft)	m83	326	m0	m176	m592	m17	77	135	16	#671	97	38
Internal Link Dist (ft)		905			760			542			1064	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	320		630	400		350	150					
50th Bay Block Time %					6%							
95th Bay Block Time %		3%			13%							
Queuing Penalty (veh)		1			36							

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 37 (28%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.66
Intersection Signal Delay: 36.1 Intersection LOS: D
Intersection Capacity Utilization 88.9% ICU Level of Service D
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

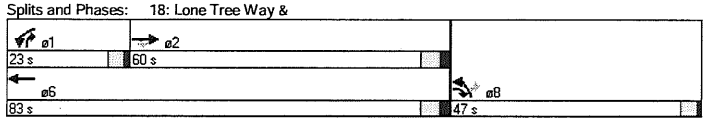
Splits and Phases: 17: Lone Tree Way & Canada Valley



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	0	3539	1583	1770	3539	0	3433	0	1583	0	0	0
Flt Permitted				0.950			0.950					
Satd. Flow (perm)	0	3539	1583	1770	3539	0	3420	0	1583	0	0	0
Satd. Flow (RTOR)			162						24			
Volume (vph)	0	1057	927	194	1025	0	1006	0	239	0	0	0
Lane Group Flow (vph)	0	1229	1078	223	1178	0	1082	0	257	0	0	0
Turn Type			pm+ov	Prot			Prot		custom			
Protected Phases		2	8	1	6		8		1			
Permitted Phases			2						8 1			
Total Split (s)	0.0	60.0	47.0	23.0	83.0	0.0	47.0	0.0	23.0	0.0	0.0	0.0
Act Effct Green (s)		58.3	104.8	19.2	80.6		43.3		65.6			
Actuated g/C Ratio		0.45	0.81	0.15	0.62		0.33		0.50			
v/c Ratio		0.77	0.82	0.85	0.54		0.94		0.32			
Uniform Delay, d1		30.2	5.8	54.0	14.1		42.1		17.0			
Delay		25.1	13.9	63.6	14.1		49.2		17.0			
LOS		C	B	E	B		D		B			
Approach Delay		19.9			22.0			43.0				
Approach LOS		B			C			D				
Queue Length 50th (ft)		487	896	184	285		452		109			
Queue Length 95th (ft)		m342	m830	#298	325		#585		168			
Internal Link Dist (ft)		760			760			536			369	
50th Up Block Time (%)			5%									
95th Up Block Time (%)			5%				10%					
Turn Bay Length (ft)			400	310			150					
50th Bay Block Time %		9%	15%				45%					
95th Bay Block Time %		2%	8%		4%		50%		9%			
Queuing Penalty (veh)		61	126		5		299		48			

Intersection Summary
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 72 (55%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.94
Intersection Signal Delay: 26.6 Intersection LOS: C
Intersection Capacity Utilization 87.2% ICU Level of Service D
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

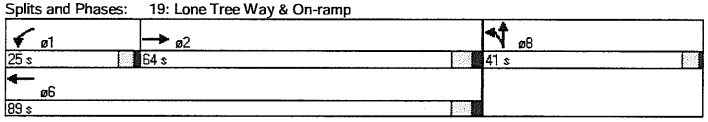
Splits and Phases: 18: Lone Tree Way &



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	0	3539	0	1770	3539	0	0	1729	0	0	0	0
Flt Permitted				0.950				0.966				
Satd. Flow (perm)	0	3539	0	1770	3539	0	0	1729	0	0	0	0
Satd. Flow (RTOR)								2				
Volume (vph)	0	1294	2	20	1217	0	2	0	1	0	0	0
Lane Group Flow (vph)	0	1524	0	23	1383	0	0	7	0	0	0	0
Turn Type				Prot			Split					
Protected Phases		2		1	6		8	8				
Permitted Phases												
Total Split (s)	0.0	64.0	0.0	25.0	89.0	0.0	41.0	41.0	0.0	0.0	0.0	0.0
Act Effct Green (s)		119.6		7.2	127.4			6.0				
Actuated g/C Ratio		0.92		0.06	0.98			0.05				
v/c Ratio		0.47		0.24	0.40			0.09				
Uniform Delay, d1		1.8		60.7	0.4			45.0				
Delay		0.8		58.4	0.3			51.3				
LOS		A		E	A			D				
Approach Delay		0.8			1.2			51.3				
Approach LOS		A			A			D				
Queue Length 50th (ft)		7		19	0			4				
Queue Length 95th (ft)		83		47	67			9				
Internal Link Dist (ft)		760			620			935			1156	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)				280								
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 88 (68%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.47
Intersection Signal Delay: 1.1 Intersection LOS: A
Intersection Capacity Utilization 52.2% ICU Level of Service A

Splits and Phases: 19: Lone Tree Way & On-ramp

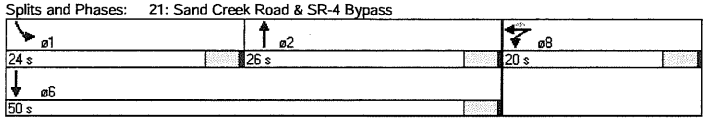


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	0	0	0	0	1770	1583	0	3412	0	1770	3539	0
Flt Permitted					0.950					0.950		
Satd. Flow (perm)	0	0	0	0	1770	1583	0	3412	0	1770	3539	0
Satd. Flow (RTOR)						433		63				
Volume (vph)	0	0	0	121	0	390	0	713	222	599	656	0
Lane Group Flow (vph)	0	0	0	0	134	433	0	1039	0	666	729	0
Turn Type				Split		Perm				Prot		
Protected Phases				8	8			2		1	6	
Permitted Phases						8						
Total Split (s)	0.0	0.0	0.0	20.0	20.0	20.0	0.0	26.0	0.0	24.0	50.0	0.0
Act Effct Green (s)					17.0	17.0		23.0		21.0	47.0	
Actuated g/C Ratio					0.24	0.24		0.33		0.30	0.67	
v/c Ratio					0.31	0.61		0.89		1.25	0.31	
Uniform Delay, d1					21.7	0.0		20.9		24.5	4.7	
Delay					22.3	2.9		26.2		128.7	4.8	
LOS					C	A		C		F	A	
Approach Delay					7.5			26.2			64.0	
Approach LOS					A			C			E	
Queue Length 50th (ft)					47	0		208		~367	57	
Queue Length 95th (ft)					92	65		#326		#557	80	
Internal Link Dist (ft)		10527			352			669			5563	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)						420				620		
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 70
Offset: 16 (23%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Control Type: Pretimed
Maximum v/c Ratio: 1.25
Intersection Signal Delay: 40.2 Intersection LOS: D
Intersection Capacity Utilization 84.1% ICU Level of Service D
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 21: Sand Creek Road & SR-4 Bypass

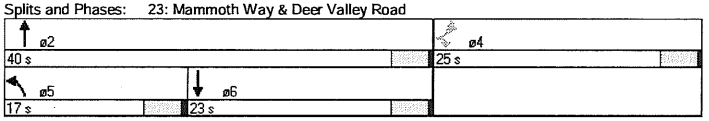


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	0	1583	0	0	0	1770	3539	0	0	3511	0
Flt Permitted	0.950						0.950					
Satd. Flow (perm)	1770	0	1583	0	0	0	1770	3539	0	0	3511	0
Satd. Flow (RTOR)			10								9	
Volume (vph)	21	0	9	0	0	0	38	553	0	0	451	25
Lane Group Flow (vph)	23	0	10	0	0	0	42	614	0	0	529	0
Turn Type	custom		custom				Prot					
Protected Phases							5	2			6	
Permitted Phases	4		4									
Total Split (s)	25.0	0.0	25.0	0.0	0.0	0.0	17.0	40.0	0.0	0.0	23.0	0.0
Act Effct Green (s)	22.0		22.0				14.0	37.0			20.0	
Actuated g/C Ratio	0.34		0.34				0.22	0.57			0.31	
v/c Ratio	0.04		0.02				0.11	0.30			0.49	
Uniform Delay, d1	14.4		0.0				20.5	7.3			18.0	
Delay	14.6		8.4				19.7	12.5			12.7	
LOS	B		A				B	B			B	
Approach Delay		12.7						12.9			12.7	
Approach LOS		B						B			B	
Queue Length 50th (ft)	6		0				15	60			64	
Queue Length 95th (ft)	20		9				39	161			93	
Internal Link Dist (ft)		314			276			957			970	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)												
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 65
Offset: 16 (25%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Control Type: Pretimed
Maximum v/c Ratio: 0.49
Intersection Signal Delay: 12.8 Intersection LOS: B
Intersection Capacity Utilization 27.0% ICU Level of Service A

Splits and Phases: 23: Mammoth Way & Deer Valley Road



TRIP GENERATION

Aviano Adult Community Trip Generation									
Description	Size (DU)	Rate		AM Peak Trips			PM Peak Trips		
		AM	PM	In	Out	Total	In	Out	Total
Senior Adult Housing - Detached	535	0.29	0.34	59	96	155	113	69	182

APPROVED & PENDING DEVELOPMENTS INFORMATION

Trip Generation Planner (ITE 7th Edition)

Weekday Trip Generation ***Project Name*** 2250 Senior Housing
Trips Based on Average Rates or Equations ***Project Number*** 097311001.1

Kimley-Horn and Associates, Inc.

ITE Code	Land Use Description	Independent Variable	No. of Units	Avg Rate or Eq	Trip Rates: Daily Rate	AM Rate	PM Rate	Total Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out	New Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out
210	Single-Family Detached Housing	Dwelling Unit(s)		Avg	9.57	0.75	1.01														
220	Apartment	Dwelling Unit(s)		Avg	6.72	0.51	0.62														
221	Low-Rise Apartment	Occ. Dwelling Unit(s)		Avg	6.59	0.46	0.58														
222	High-Rise Apartment	Dwelling Unit(s)		Avg	4.20	0.30	0.35														
223	Mid-Rise Apartment	Dwelling Unit(s)		Avg	*	0.30	0.39														
224	Rental Townhouse	Dwelling Unit(s)		Avg	*	0.70	0.72														
230	Residential Condominium/Townhouse	Dwelling Unit(s)		Avg	5.86	0.44	0.52														
231	Low-Rise Residential Condominium/Townhouse	Dwelling Unit(s)		Avg	*	0.67	0.78														
232	High-Rise Residential Condominium/Townhouse	Dwelling Unit(s)		Avg	4.18	0.34	0.38														
233	Luxury Condominium/Townhouse	Occ. Dwelling Unit(s)		Avg	*	0.56	0.55														
240	Mobile Home Park	Occ. Dwelling Unit(s)		Avg	4.99	0.44	0.59														
251	Senior Adult Housing-Detached	Dwelling Unit(s)	1150	Avg	3.71	0.20	0.26	4267	230	299	87	143	182	117	4267	230	299	87	143	182	117
251X-a	Senior Adult Housing (CA Pulte Dell Webb)	Dwelling Unit(s)		Avg	3.96	0.17	0.23														
252	Senior Adult Housing-Attached	Occ. Dwelling Unit(s)		Avg	3.48	0.08	0.11														
253	Congregate Care Facility	Dwelling Unit(s)		Avg	2.02	0.06	0.17														
254	Assisted Living	Bed(s)		Avg	2.66	0.14	0.22														
255	Continuing Care Retirement Community	Occupied Unit(s)		Avg	2.81	0.18	0.29														
260	Recreational Homes	Dwelling Unit(s)		Avg	3.16	0.16	0.26														
270	Residential Planned Unit Development	Dwelling Unit(s)		Avg	7.50	0.51	0.62														
							Totals	4267	230	299	87	143	182	117	4267	230	299	87	143	182	117
					14%		Reduction	597	32	42	12	20	25	16							
							Grand Total	3670	198	257	75	123	157	101							

Notes:
(1) AM and/or PM rates correspond to peak hour of generator

A Trip generation data from ITE *Trip Generation*, 7th Edition
B AM/PM rates correspond to peak of adjacent street traffic (if data available)
C Includes weekday rates only
D Total trips include pass-by trips
E Pass-by rates from ITE *Trip Generation Handbook*, 2004
F Worksheet is intended as a planning tool. Verify results w/ ITE *Trip Generation*, 7th Edition
G Enter data only in aqua shaded cells
H Comments on typical building sizes based on internet search results.

Trip Generation Planner (ITE 7th Edition)

Weekday Trip Generation ***Project Name*** Laurel Ranch
Trips Based on Average Rates or Equations ***Project Number*** 097311001.1

Kimley-Horn and Associates, Inc.

ITE Code	Land Use Description	Independent Variable	No. of Units	Avg Rate or Eq	Trip Rates: Daily Rate	AM Rate	PM Rate	Total Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out	New Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out
210	Single-Family Detached Housing	Dwelling Unit(s)	217	Avg	9.57	0.75	1.01	2077	163	219	41	122	138	81	2077	163	219	41	122	138	81
220	Apartment	Dwelling Unit(s)		Avg	6.72	0.51	0.62														
221	Low-Rise Apartment	Occ. Dwelling Unit(s)		Avg	6.59	0.46	0.58														
222	High-Rise Apartment	Dwelling Unit(s)		Avg	4.20	0.30	0.35														
223	Mid-Rise Apartment	Dwelling Unit(s)		Avg	*	0.30	0.39														
224	Rental Townhouse	Dwelling Unit(s)		Avg	*	0.70	0.72														
230	Residential Condominium/Townhouse	Dwelling Unit(s)		Avg	5.86	0.44	0.52														
231	Low-Rise Residential Condominium/Townhouse	Dwelling Unit(s)		Avg	*	0.67	0.78														
232	High-Rise Residential Condominium/Townhouse	Dwelling Unit(s)		Avg	4.18	0.34	0.38														
233	Luxury Condominium/Townhouse	Occ. Dwelling Unit(s)		Avg	*	0.56	0.55														
240	Mobile Home Park	Occ. Dwelling Unit(s)		Avg	4.99	0.44	0.59														
251	Senior Adult Housing-Detached	Dwelling Unit(s)		Avg	3.71	0.20	0.26														
251X-a	Senior Adult Housing (CA Pulte Dell Webb)	Dwelling Unit(s)		Avg	3.96	0.17	0.23														
252	Senior Adult Housing-Attached	Occ. Dwelling Unit(s)		Avg	3.48	0.08	0.11														
253	Congregate Care Facility	Dwelling Unit(s)		Avg	2.02	0.06	0.17														
254	Assisted Living	Bed(s)		Avg	2.66	0.14	0.22														
255	Continuing Care Retirement Community	Occupied Unit(s)		Avg	2.81	0.18	0.29														
260	Recreational Homes	Dwelling Unit(s)		Avg	3.16	0.16	0.26														
270	Residential Planned Unit Development	Dwelling Unit(s)		Avg	7.50	0.51	0.62														
							Totals	2077	163	219	41	122	138	81	2077	163	219	41	122	138	81
					14%		Reduction	291	23	31	6	17	19	11							
							Grand Total	1786	140	188	35	105	119	70							

Notes:
(1) AM and/or PM rates correspond to peak hour of generator

A Trip generation data from ITE *Trip Generation*, 7th Edition
B AM/PM rates correspond to peak of adjacent street traffic (if data available)
C Includes weekday rates only
D Total trips include pass-by trips
E Pass-by rates from ITE *Trip Generation Handbook*, 2004
F Worksheet is intended as a planning tool. Verify results w/ ITE *Trip Generation*, 7th Edition
G Enter data only in aqua shaded cells
H Comments on typical building sizes based on internet search results.

Trip Generation Planner (ITE 7th Edition)

Weekday Trip Generation ***Project Name*** Rennaissance at Bluerock
Trips Based on Average Rates or Equations ***Project Number*** 097311001.1

Kimley-Horn and Associates, Inc.

ITE Code	Land Use Description	Independent Variable	No. of Units	Avg Rate or Eq	Trip Rates: Daily Rate	AM Rate	PM Rate	Total Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out	New Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out
210	Single-Family Detached Housing	Dwelling Unit(s)	86	Avg	9.57	0.75	1.01	823	65	87	16	49	55	32	823	65	87	16	49	55	32
220	Apartment	Dwelling Unit(s)		Avg	6.72	0.51	0.62														
221	Low-Rise Apartment	Occ. Dwelling Unit(s)		Avg	6.59	0.46	0.58														
222	High-Rise Apartment	Dwelling Unit(s)		Avg	4.20	0.30	0.35														
223	Mid-Rise Apartment	Dwelling Unit(s)		Avg	*	0.30	0.39														
224	Rental Townhouse	Dwelling Unit(s)		Avg	*	0.70	0.72														
230	Residential Condominium/Townhouse	Dwelling Unit(s)		Avg	5.86	0.44	0.52														
231	Low-Rise Residential Condominium/Townhouse	Dwelling Unit(s)		Avg	*	0.67	0.78														
232	High-Rise Residential Condominium/Townhouse	Dwelling Unit(s)		Avg	4.18	0.34	0.38														
233	Luxury Condominium/Townhouse	Occ. Dwelling Unit(s)		Avg	*	0.55	0.55														
240	Mobile Home Park	Occ. Dwelling Unit(s)		Avg	4.99	0.44	0.59														
251	Senior Adult Housing-Detached	Dwelling Unit(s)		Avg	3.71	0.20	0.26														
251X-a	Senior Adult Housing (CA Pulte Dell Webb)	Dwelling Unit(s)		Avg	3.96	0.17	0.23														
252	Senior Adult Housing-Attached	Occ. Dwelling Unit(s)		Avg	3.48	0.08	0.11														
253	Congregate Care Facility	Dwelling Unit(s)		Avg	2.02	0.06	0.17														
254	Assisted Living	Bed(s)		Avg	2.66	0.14	0.22														
255	Continuing Care Retirement Community	Occupied Unit(s)		Avg	2.81	0.18	0.29														
260	Recreational Homes	Dwelling Unit(s)		Avg	3.16	0.16	0.26														
270	Residential Planned Unit Development	Dwelling Unit(s)		Avg	7.50	0.51	0.62														
710	General Office Building *(1)*	1,000 Sq Ft	246.6	Avg	11.01	1.55	1.49	2715	382	367	336	46	62	305	2715	382	367	336	46	62	305
714	Corporate Headquarters *(1)*	1,000 Sq Ft		Avg	7.98	1.49	1.40														
715	Single Tenant Office Building *(1)*	1,000 Sq Ft		Avg	11.57	1.80	1.73														
720	Medical-Dental Office Building	1,000 Sq Ft		Avg	36.13	2.48	3.72														
730	Government Office Building *(1)*	1,000 Sq Ft		Avg	68.93	5.88	11.03														
731	State Motor Vehicles Department	1,000 Sq Ft		Avg	166.02	9.84	17.09														
732	US Post Office	1,000 Sq Ft		Avg	108.19	8.02	10.89														
733	Government Office Complex	1,000 Sq Ft		Avg	27.92	2.21	2.85														
750	Office Park *(1)*	1,000 Sq Ft		Avg	11.42	1.74	1.50														
760	Research and Development Center *(1)*	1,000 Sq Ft		Avg	8.11	1.24	1.08														
770	Business Park *(1)*	1,000 Sq Ft		Avg	12.76	1.43	1.29														
							Totals	823	65	87	16	49	55	32	823	65	87	16	49	55	32
					14%		Reduction	115	9	12	2	7	8	4							
							Sub Total 1	708	56	75	14	42	47	28							
							Totals	2715	382	367	336	46	62	305	2715	382	367	336	46	62	305
					23%		Reduction	624	88	84	77	11	14	70							
							Sub Total 2	2091	294	283	259	35	48	235							
							Grand Total	2798	350	357	272	78	95	262							

A Trip generation data from ITE *Trip Generation*, 7th Edition
B AM/PM rates correspond to peak of adjacent street traffic (if data available)
C Includes weekday rates only
D Total trips include pass-by trips
E Pass-by rates from ITE *Trip Generation Handbook*, 2004
F Worksheet is intended as a planning tool. Verify results w/ ITE *Trip Generation*, 7th Edition
G Enter data only in aqua shaded cells
H Comments on typical building sizes based on internet search results.

Trip Generation Planner (ITE 7th Edition)

Weekday Trip Generation ***Project Name*** Davidon Homes
Trips Based on Average Rates or Equations ***Project Number*** 097311001.1

Kimley-Horn and Associates, Inc.

ITE Code	Land Use Description	Independent Variable	No. of Units	Avg Rate or Eq	Trip Rates: Daily Rate	AM Rate	PM Rate	Total Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out	New Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out
210	Single-Family Detached Housing	Dwelling Unit(s)	538	Avg	9.57	0.75	1.01	5149	404	543	101	303	342	201	5149	404	543	101	303	342	201
220	Apartment	Dwelling Unit(s)		Avg	6.72	0.51	0.62														
221	Low-Rise Apartment	Occ. Dwelling Unit(s)		Avg	6.59	0.46	0.58														
222	High-Rise Apartment	Dwelling Unit(s)		Avg	4.20	0.30	0.35														
223	Mid-Rise Apartment	Dwelling Unit(s)		Avg	*	0.30	0.39														
224	Rental Townhouse	Dwelling Unit(s)		Avg	*	0.70	0.72														
230	Residential Condominium/Townhouse	Dwelling Unit(s)		Avg	5.86	0.44	0.52														
231	Low-Rise Residential Condominium/Townhouse	Dwelling Unit(s)		Avg	*	0.67	0.78														
232	High-Rise Residential Condominium/Townhouse	Dwelling Unit(s)		Avg	4.18	0.34	0.38														
233	Luxury Condominium/Townhouse	Occ. Dwelling Unit(s)		Avg	*	0.55	0.55														
240	Mobile Home Park	Occ. Dwelling Unit(s)		Avg	4.99	0.44	0.59														
251	Senior Adult Housing-Detached	Dwelling Unit(s)		Avg	3.71	0.20	0.26														
251X-a	Senior Adult Housing (CA Pulte Dell Webb)	Dwelling Unit(s)		Avg	3.96	0.17	0.23														
252	Senior Adult Housing-Attached	Occ. Dwelling Unit(s)		Avg	3.48	0.08	0.11														
253	Congregate Care Facility	Dwelling Unit(s)		Avg	2.02	0.06	0.17														
254	Assisted Living	Bed(s)		Avg	2.66	0.14	0.22														
255	Continuing Care Retirement Community	Occupied Unit(s)		Avg	2.81	0.18	0.29														
260	Recreational Homes	Dwelling Unit(s)		Avg	3.16	0.16	0.26														
270	Residential Planned Unit Development	Dwelling Unit(s)		Avg	7.50	0.51	0.62														
							Totals	5149	404	543	101	303	342	201	5149	404	543	101	303	342	201
					14%		Reduction	721	57	76	14	42	48	28							
							Grand Total	4428	347	467	87	261	294	173							

Notes:
(1) AM and/or PM rates correspond to peak hour of generator

A Trip generation data from ITE *Trip Generation*, 7th Edition
B AM/PM rates correspond to peak of adjacent street traffic (if data available)
C Includes weekday rates only
D Total trips include pass-by trips
E Pass-by rates from ITE *Trip Generation Handbook*, 2004
F Worksheet is intended as a planning tool. Verify results w/ ITE *Trip Generation*, 7th Edition
G Enter data only in aqua shaded cells
H Comments on typical building sizes based on internet search results.

Trip Generation Planner (ITE 7th Edition)

Weekday Trip Generation — *Project Name* Deer Valley Business Park
Trips Based on Average Rates or Equations — *Project Number* 097311001.1

Kimley-Horn and Associates, Inc.

ITE Code	Land Use Description	Independent Variable	No. of Units	Avg Rate or Eq	Trip Rates: Daily Rate	AM Rate	PM Rate	Total Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out	New Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out
710	General Office Building *(1)*	1,000 Sq Ft	62	Avg	11.01	1.55	1.49	903	127	122	112	15	21	101	903	127	122	112	15	21	101
714	Corporate Headquarters *(1)*	1,000 Sq Ft		Avg	7.88	1.49	1.40														
715	Single Tenant Office Building *(1)*	1,000 Sq Ft		Avg	11.57	1.80	1.73														
720	Medical-Dental Office Building	1,000 Sq Ft		Avg	36.13	2.48	3.72														
730	Government Office Building *(1)*	1,000 Sq Ft		Avg	68.93	5.88	11.03														
731	State Motor Vehicles Department	1,000 Sq Ft		Avg	166.02	9.84	17.09														
732	US Post Office	1,000 Sq Ft		Avg	108.19	8.02	10.89														
733	Government Office Complex	1,000 Sq Ft		Avg	27.92	2.21	2.85														
750	Office Park *(1)*	1,000 Sq Ft		Avg	11.42	1.74	1.50														
760	Research and Development Center *(1)*	1,000 Sq Ft		Avg	8.11	1.24	1.06														
770	Business Park *(1)*	1,000 Sq Ft		Avg	12.76	1.43	1.29														
812	Building Materials and Lumber Store	1,000 Sq Ft		Avg	45.16	2.60	4.49														
813	Free Standing Discount Superstore	1,000 Sq Ft		Avg	49.21	1.84	3.87														
813X-k	Free Standing Discount Superstore (200+ KSF)	1,000 Sq Ft		Avg			5.50														
814	Specialty Retail Center	1,000 Sq Ft		Avg	44.32	*	2.71														
815	Free Standing Discount Store	1,000 Sq Ft		Avg	56.02	0.84	5.06														
816	Hardware/Paint Store	1,000 Sq Ft		Avg	51.29	1.08	4.84														
817	Nursery/Garden Center	1,000 Sq Ft		Avg	36.08	1.31	3.80														
818	Nursery (Wholesale)	1,000 Sq Ft		Avg	39.00	2.40	5.17														
820	Shopping Center	1,000 Sq Ft	92.982	Avg	42.94	1.03	3.75	3993	96	349	59	37	168	181	3993	96	230	59	37	111	119
820X-k	Kohl's Free Standing Department Store	1,000 Sq Ft		Avg	*	0.40	1.90														
823	Factory Outlet Center	1,000 Sq Ft		Avg	26.59	0.67	2.29														
841	New Car Sales	1,000 Sq Ft		Avg	33.34	2.05	2.64														
843	Automobile Parts Sales	1,000 Sq Ft		Avg	61.91	2.21	5.98														
848	Tire Store	1,000 Sq Ft		Avg	24.87	2.89	4.15														
849	Tire Superstore	1,000 Sq Ft		Avg	20.36	1.34	2.11														
850	Supermarket	1,000 Sq Ft		Avg	102.24	3.25	10.45														
851	Convenience Market (Open 24 Hours)	1,000 Sq Ft		Avg	737.99	67.03	52.41														
852	Convenience Market (Open 15-16 Hours)	1,000 Sq Ft		Avg	*	31.02	34.57														
853	Convenience Market w/ Gasoline Pumps	Fueling Position(s)		Avg	542.60	17.17	19.22														
854	Discount Supermarket	1,000 Sq Ft		Avg	96.82	2.74	8.90														
860	Wholesale Market	1,000 Sq Ft		Avg	6.73	0.50	0.21														
861	Discount Club	1,000 Sq Ft		Avg	41.80	0.56	4.24														
862	Home Improvement Superstore	1,000 Sq Ft		Avg	29.80	1.20	2.45														
863	Electronics Superstore	1,000 Sq Ft		Avg	45.04	0.28	4.50														
864	Toy/Children's Superstore	1,000 Sq Ft		Avg	*	*	4.99														
865	Baby Superstore	1,000 Sq Ft		Avg	*	*	1.62														
866	Pet Supply Superstore	1,000 Sq Ft		Avg	*	*	4.96														
867	Office Supply Superstore	1,000 Sq Ft		Avg	*	*	3.40														
868	Book Superstore	1,000 Sq Ft		Avg	*	*	19.53														
869	Discount Home Furnishing Superstore	1,000 Sq Ft		Avg	47.81	*	4.01														
870	Apparel Store	1,000 Sq Ft		Avg	66.40	1.00	3.83														
879	Arts and Crafts Store *(1)*	1,000 Sq Ft		Avg	56.55	4.65	6.21														
880	Pharmacy/Drugstore w/o Drive-Through Window	1,000 Sq Ft		Avg	90.06	3.20	8.42														
881	Pharmacy/Drugstore w/ Drive-Through Window	1,000 Sq Ft		Avg	88.16	2.66	8.62														
890	Furniture Store	1,000 Sq Ft		Avg	5.06	0.17	0.46														
896	Video Rental Store	1,000 Sq Ft		Avg	*	*	13.60														
							Totals	3993	96	349	59	37	168	181							
				53%			Reduction	2116	51	185	31	20	89	96							
							Sub Total 1	1877	45	164	28	17	79	85							
							Totals	903	127	122	112	15	21	101							
				23%			Reduction	208	29	28	26	3	5	23							
							Sub Total 2	695	98	94	86	12	16	78							
							Grand Total	2572	143	258	114	29	96	163							

A Trip generation data from ITE *Trip Generation*, 7th Edition
B AM/PM rates correspond to peak of adjacent street traffic (if data available)
C Includes weekday rates only
D Total trips include pass-by trips
E Pass-by rates from ITE *Trip Generation Handbook*, 2004
F Worksheet is intended as a planning tool. Verify results w/ ITE *Trip Generation*, 7th Edition
G Enter data only in aqua shaded cells
H Comments on typical building sizes based on internet search results.

Trip Generation Planner (ITE 7th Edition)

Weekday Trip Generation — *Project Name* Hidden Glen
Trips Based on Average Rates or Equations — *Project Number* 097311001.1

Kimley-Horn and Associates, Inc.

ITE Code	Land Use Description	Independent Variable	No. of Units	Avg Rate or Eq	Trip Rates: Daily Rate	AM Rate	PM Rate	Total Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out	New Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out
210	Single-Family Detached Housing	Dwelling Unit(s)	363	Avg	9.57	0.75	1.01	3474	272	367	68	204	231	136	3474	272	367	68	204	231	136
220	Apartment	Dwelling Unit(s)		Avg	6.72	0.51	0.62														
221	Low-Rise Apartment	Occ. Dwelling Unit(s)		Avg	6.59	0.46	0.58														
222	High-Rise Apartment	Dwelling Unit(s)		Avg	4.20	0.30	0.35														
223	Mid-Rise Apartment	Dwelling Unit(s)		Avg	*	0.30	0.39														
224	Rental Townhouse	Dwelling Unit(s)		Avg	*	0.70	0.72														
230	Residential Condominium/Townhouse	Dwelling Unit(s)		Avg	5.86	0.44	0.52														
231	Low-Rise Residential Condominium/Townhouse	Dwelling Unit(s)		Avg	*	0.67	0.78														
232	High-Rise Residential Condominium/Townhouse	Dwelling Unit(s)		Avg	4.18	0.34	0.38														
233	Luxury Condominium/Townhouse	Occ. Dwelling Unit(s)		Avg	*	0.56	0.55														
240	Mobile Home Park	Occ. Dwelling Unit(s)		Avg	4.99	0.44	0.59														
251	Senior Adult Housing-Detached	Dwelling Unit(s)		Avg	3.71	0.20	0.26														
251X-a	Senior Adult Housing (CA Pulte Dell Webb)	Dwelling Unit(s)		Avg	3.96	0.17	0.23														
252	Senior Adult Housing-Attached	Occ. Dwelling Unit(s)		Avg	3.48	0.08	0.11														
253	Congregate Care Facility	Dwelling Unit(s)		Avg	2.02	0.06	0.17														
254	Assisted Living	Bed(s)		Avg	2.66	0.14	0.22														
255	Continuing Care Retirement Community	Occupied Unit(s)		Avg	2.81	0.18	0.29														
260	Recreational Homes	Dwelling Unit(s)		Avg	3.16	0.16	0.26														
270	Residential Planned Unit Development	Dwelling Unit(s)		Avg	7.50	0.51	0.62														
							Totals	3474	272	367	68	204	231	136	3474	272	367	68	204	231	136
				14%			Reduction	486	38	51	10	29	32	19							
							Grand Total	2988	234	316	58	175	199	117							

Notes:
(1) AM and/or PM rates correspond to peak hour of generator

A Trip generation data from ITE *Trip Generation*, 7th Edition
B AM/PM rates correspond to peak of adjacent street traffic (if data available)
C Includes weekday rates only
D Total trips include pass-by trips
E Pass-by rates from ITE *Trip Generation Handbook*, 2004
F Worksheet is intended as a planning tool. Verify results w/ ITE *Trip Generation*, 7th Edition
G Enter data only in aqua shaded cells
H Comments on typical building sizes based on internet search results.

Trip Generation Planner (ITE 7th Edition)

Weekday Trip Generation ***Project Name*** Kaiser Hospital
Trips Based on Average Rates or Equations ***Project Number*** 097311001.1

Kimley-Horn and Associates, Inc.

ITE Code	Land Use Description	Independent Variable	No. of Units	Avg Rate or Eq	Trip Rates: Daily Rate	AM Rate	PM Rate	Total Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out	New Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out
610	Hospital	1,000 Sq Ft	427.4	Avg	17.57	1.20	1.18	7509	513	504	344	169	166	338	7509	513	504	344	169	166	338
620	Nursing Home	Bed(s)		Avg	2.37	0.17	0.22														
630	Clinic	1,000 Sq Ft		Avg	31.45	*	5.18														
710	General Office Building *(1)*	1,000 Sq Ft		Avg	11.01	1.55	1.49														
714	Corporate Headquarters *(1)*	1,000 Sq Ft		Avg	7.98	1.49	1.40														
715	Single Tenant Office Building *(1)*	1,000 Sq Ft		Avg	11.57	1.80	1.73														
720	Medical-Dental Office Building	1,000 Sq Ft		Avg	36.13	2.49	3.72														
730	Government Office Building *(1)*	1,000 Sq Ft		Avg	68.93	5.88	11.03														
731	State Motor Vehicles Department	1,000 Sq Ft		Avg	166.02	9.84	17.09														
732	US Post Office	1,000 Sq Ft		Avg	108.19	8.02	10.69														
733	Government Office Complex	1,000 Sq Ft		Avg	27.92	2.21	2.85														
750	Office Park *(1)*	1,000 Sq Ft		Avg	11.42	1.74	1.50														
760	Research and Development Center *(1)*	1,000 Sq Ft		Avg	8.11	1.24	1.08														
770	Business Park *(1)*	1,000 Sq Ft		Avg	12.76	1.43	1.29														
							Totals	7509	513	504	344	169	166	338	7509	513	504	344	169	166	338
					27%		Reduction	2027	139	136	93	46	45	91							
							Grand Total	5482	374	368	251	123	121	247							

A Trip generation data from ITE *Trip Generation*, 7th Edition
B AM/PM rates correspond to peak of adjacent street traffic (if data available)
C Includes weekday rates only
D Total trips include pass-by trips
E Pass-by rates from ITE *Trip Generation Handbook*, 2004
F Worksheet is intended as a planning tool. Verify results w/ ITE *Trip Generation*, 7th Edition
G Enter data only in aqua shaded cells
H Comments on typical building sizes based on internet search results.

Trip Generation Planner (ITE 7th Edition)

Weekday Trip Generation ***Project Name*** Lone Tree Landing Retail
Trips Based on Average Rates or Equations ***Project Number*** 097311001.1

Kimley-Horn and Associates, Inc.

ITE Code	Land Use Description	Independent Variable	No. of Units	Avg Rate or Eq	Trip Rates: Daily Rate	AM Rate	PM Rate	Total Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out	New Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out
812	Building Materials and Lumber Store	1,000 Sq Ft		Avg	45.16	2.80	4.49														
813	Free Standing Discount Superstore	1,000 Sq Ft		Avg	49.21	1.84	3.87														
813X-a	Free Standing Discount Superstore (200+ KSF)	1,000 Sq Ft		Avg			5.50														
814	Specialty Retail Center	1,000 Sq Ft		Avg	44.32	*	2.71														
815	Free Standing Discount Store	1,000 Sq Ft		Avg	56.02	0.84	5.06														
816	Hardware/Paint Store	1,000 Sq Ft		Avg	51.29	1.08	4.84														
817	Nursery/Garden Center	1,000 Sq Ft		Avg	36.08	1.31	3.80														
818	Nursery (Wholesale)	1,000 Sq Ft		Avg	39.00	2.40	5.17														
820	Shopping Center	1,000 Sq Ft	81.963	Avg	42.94	1.03	3.75	3519	84	307	51	33	147	160	3519	84	203	51	33	97	106
82X-a	Kohl's Free Standing Department Store	1,000 Sq Ft		Avg	*	0.40	1.90														
823	Factory Outlet Center	1,000 Sq Ft		Avg	26.59	0.87	2.29														
841	New Car Sales	1,000 Sq Ft		Avg	33.34	2.05	2.64														
843	Automobile Parts Sales	1,000 Sq Ft		Avg	61.91	2.21	5.98														
848	Tire Store	1,000 Sq Ft		Avg	24.87	2.69	4.15														
849	Tire Superstore	1,000 Sq Ft		Avg	20.36	1.34	2.11														
850	Supermarket	1,000 Sq Ft		Avg	102.24	3.25	10.45														
851	Convenience Market (Open 24 Hours)	1,000 Sq Ft		Avg	737.99	67.03	52.41														
852	Convenience Market (Open 15-16 Hours)	1,000 Sq Ft		Avg	*	31.02	34.57														
853	Convenience Market w/ Gasoline Pumps	Fueling Position(s)		Avg	542.60	17.17	19.22														
854	Discount Supermarket	1,000 Sq Ft		Avg	96.82	2.74	8.90														
860	Wholesale Market	1,000 Sq Ft		Avg	6.73	0.50	0.21														
861	Discount Club	1,000 Sq Ft		Avg	41.80	0.56	4.24														
862	Home Improvement Superstore	1,000 Sq Ft		Avg	29.80	1.20	2.45														
863	Electronics Superstore	1,000 Sq Ft		Avg	45.04	0.28	4.50														
864	Toy/Children's Superstore	1,000 Sq Ft		Avg	*	*	4.99														
865	Baby Superstore	1,000 Sq Ft		Avg	*	*	1.82														
866	Pet Supply Superstore	1,000 Sq Ft		Avg	*	*	4.98														
867	Office Supply Superstore	1,000 Sq Ft		Avg	*	*	3.40														
868	Book Superstore	1,000 Sq Ft		Avg	*	*	19.53														
869	Discount Home Furnishing Superstore	1,000 Sq Ft		Avg	47.81	*	4.01														
870	Apparel Store	1,000 Sq Ft		Avg	66.40	1.00	3.83														
879	Arts and Crafts Store *(1)*	1,000 Sq Ft		Avg	58.55	4.65	6.21														
880	Pharmacy/Drugstore w/o Drive-Through Window	1,000 Sq Ft		Avg	90.06	3.20	8.42														
881	Pharmacy/Drugstore w/ Drive-Through Window	1,000 Sq Ft		Avg	88.16	2.66	8.62														
890	Furniture Store	1,000 Sq Ft		Avg	5.06	0.17	0.48														
896	Video Rental Store	1,000 Sq Ft		Avg	*	*	13.60														
							Totals	3519	84	307	51	33	147	160	3519	84	203	51	33	97	106
					53%		Reduction	1865	45	163	27	17	78	85							
							Grand Total	1654	39	144	24	16	69	75							

Notes:
(1) AM and/or PM rates correspond to peak hour of generator

A Trip generation data from ITE *Trip Generation*, 7th Edition
B AM/PM rates correspond to peak of adjacent street traffic (if data available)
C Includes weekday rates only
D Total trips include pass-by trips
E Pass-by rates from ITE *Trip Generation Handbook*, 2004
F Worksheet is intended as a planning tool. Verify results w/ ITE *Trip Generation*, 7th Edition
G Enter data only in aqua shaded cells
H Comments on typical building sizes based on internet search results.

Trip Generation Planner (ITE 7th Edition)

Weekday Trip Generation ***Project Name*** In-Shape Shopping Center
Trips Based on Average Rates or Equations ***Project Number*** 097311001.1

Kimley-Horn and Associates, Inc.

ITE Code	Land Use Description	Independent Variable	No. of Units	Avg Rate or Eq	Trip Rates: Daily Rate	AM Rate	PM Rate	Total Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out	New Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out
210	Single-Family Detached Housing	Dwelling Unit(s)	66	Avg	9.57	0.75	1.01	823	65	87	16	49	55	32	823	65	87	16	49	55	32
220	Apartment	Dwelling Unit(s)		Avg	6.72	0.51	0.62														
221	Low-Rise Apartment	Occ. Dwelling Unit(s)		Avg	6.59	0.46	0.58														
222	High-Rise Apartment	Dwelling Unit(s)		Avg	4.20	0.30	0.35														
223	Mid-Rise Apartment	Dwelling Unit(s)		Avg	*	0.30	0.39														
224	Rental Townhouse	Dwelling Unit(s)		Avg	*	0.70	0.72														
230	Residential Condominium/Townhouse	Dwelling Unit(s)		Avg	5.86	0.44	0.52														
231	Low-Rise Residential Condominium/Townhouse	Dwelling Unit(s)		Avg	*	0.67	0.78														
232	High-Rise Residential Condominium/Townhouse	Dwelling Unit(s)		Avg	4.18	0.34	0.38														
233	Luxury Condominium/Townhouse	Occ. Dwelling Unit(s)		Avg	*	0.56	0.55														
240	Mobile Home Park	Occ. Dwelling Unit(s)		Avg	4.99	0.44	0.59														
480	Amusement Park	Acre(s)		Avg	75.76	0.21	3.95														
481	Zoo	Acre(s)		Avg	114.88	*	*														
488	Soccer Complex	Field(s)		Avg	71.33	1.40	20.67														
490	Tennis Courts	Court(s)		Avg	31.04	1.67	3.88														
491	Racquet/Tennis Club	Court(s)		Avg	38.70	1.31	3.35														
492	Health/Fitness Club	1,000 Sq Ft	60	Avg	32.93	1.21	4.05	1976	73	243	31	42	124	119	1976	73	243	31	42	124	119
493	Athletic Club	1,000 Sq Ft		Avg	43.00	3.06	5.76														
495	Recreational Community Center	1,000 Sq Ft		Avg	22.86	1.62	1.84														
501	Military Base	Employee(s)		Avg	1.78	0.39	0.39														
710	General Office Building *(1)*	1,000 Sq Ft	10	Avg	11.01	1.55	1.49	110	16	15	14	2	3	12	110	16	15	14	2	3	12
714	Corporate Headquarters *(1)*	1,000 Sq Ft		Avg	7.98	1.49	1.40														
715	Single Tenant Office Building *(1)*	1,000 Sq Ft		Avg	11.57	1.80	1.73														
720	Medical-Dental Office Building	1,000 Sq Ft		Avg	36.13	2.48	3.72														
730	Government Office Building *(1)*	1,000 Sq Ft		Avg	68.93	5.88	11.03														
812	Building Materials and Lumber Store	1,000 Sq Ft		Avg	45.16	2.60	4.49														
813	Free Standing Discount Superstore	1,000 Sq Ft		Avg	49.21	1.84	3.87														
813X-a	Free Standing Discount Superstore (200+ KSF)	1,000 Sq Ft		Avg			5.50														
814	Specialty Retail Center	1,000 Sq Ft		Avg	44.32	*	2.71														
815	Free Standing Discount Store	1,000 Sq Ft		Avg	56.02	0.84	5.06														
816	Hardware/Paint Store	1,000 Sq Ft		Avg	51.29	1.08	4.84														
817	Nursery/Garden Center	1,000 Sq Ft		Avg	36.08	1.31	3.80														

Trip Generation Planner (ITE 7th Edition)

Weekday Trip Generation ***Project Name*** In-Shape Shopping Center
Trips Based on Average Rates or Equations ***Project Number*** 097311001.1

Kimley-Horn and Associates, Inc.

ITE Code	Land Use Description	Independent Variable	No. of Units	Avg Rate or Eq	Trip Rates: Daily Rate	AM Rate	PM Rate	Total Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out	New Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out
818	Nursery (Wholesale)	1,000 Sq Ft		Avg	39.00	2.40	5.17														
820	Shopping Center	1,000 Sq Ft	101	Avg	42.94	1.03	3.75	4337	104	379	63	41	182	197	4337	104	250	63	41	120	130
82X-a	Kohl's Free Standing Department Store	1,000 Sq Ft		Avg	*	0.40	1.90														
823	Factory Outlet Center	1,000 Sq Ft		Avg	26.59	0.67	2.29														
841	New Car Sales	1,000 Sq Ft		Avg	33.34	2.05	2.64														
843	Automobile Parts Sales	1,000 Sq Ft		Avg	61.91	2.21	5.98														
848	Tire Store	1,000 Sq Ft		Avg	24.87	2.89	4.15														
849	Tire Superstore	1,000 Sq Ft		Avg	20.36	1.34	2.11														
850	Supermarket	1,000 Sq Ft		Avg	102.24	3.25	10.45														
931	Quality Restaurant	1,000 Sq Ft		Avg	89.95	0.81	7.49														
932	High-Turnover (Sit-Down) Restaurant	1,000 Sq Ft	14	Avg	127.15	11.52	10.92	1780	161	153	84	77	93	60	1780	161	87	84	77	53	34
933	Fast-Food Restaurant w/o D.T (General)	1,000 Sq Ft		Avg	716.00	43.87	26.15														
933-1	Fast-Food Restaurant w/o D.T - Yogurt	1,000 Sq Ft		Avg	*	*	15.12														
933-2	Fast-Food Restaurant w/o D.T - Coffee	1,000 Sq Ft		Avg	*	73.03	28.79														
933-3	Fast-Food Restaurant w/o D.T - Donut/Ice Cream	1,000 Sq Ft		Avg	*	*	20.00														
933-4	Fast-Food Restaurant w/o D.T - Donut/Sandwich	1,000 Sq Ft		Avg	*	59.75	13.00														
933-5	Fast-Food Restaurant w/o D.T - Bagel	1,000 Sq Ft		Avg	*	70.22	*														
933-6	Fast-Food Restaurant w/o D.T - Bread	1,000 Sq Ft		Avg	*	4.33	28.00														
934	Fast-Food Restaurant w/ D.T. (General)	1,000 Sq Ft		Avg	496.12	53.11	34.64														
934-1	Fast-Food Restaurant w/ D.T.- Coffee/Bread/Sand	1,000 Sq Ft		Avg	*	183.07	38.90														
935	Fast-Food Restaurant w/ D.T. No Indoor Seats	1,000 Sq Ft		Avg	*	*	153.85														
935-1	Fast-Food Restaurant w/ D.T. Coffee/Espresso	1,000 Sq Ft		Avg	1400.00	260.00	60.00														
							Totals	110	16	15	14	2	3	12	9026	419	682	208	211	358	327
				23%			Reduction	25	4	3	3	0	1	3							
							Sub Total 1	85	12	12	11	2	2	9							
							Totals	1780	161	153	84	77	93	60							
				49%			Reduction	872	79	75	41	38	46	29							
							Sub Total 2	908	82	78	43	39	47	31							
							Totals	1976	73	243	31	42	124	119							
				48%			Reduction	948	35	117	15	20	60	57							
							Sub Total 3	1028	38	126	16	22	64	62							
							Totals	4337	104	379	63	41	182	197							
				53%			Reduction	2299	55	201	33	22	96	104							
							Sub Total 4	2038	49	178	30	19	86	93							
							Grand Total	4058	181	394	99	82	200	194							

A Trip generation data from ITE *Trip Generation*, 7th Edition
B AM/PM rates correspond to peak of adjacent street traffic (if data available)
C Includes weekday rates only
D Total trips include pass-by trips
E Pass-by rates from ITE *Trip Generation Handbook*, 2004
F Worksheet is intended as a planning tool. Verify results w/ ITE *Trip Generation*, 7th Edition
G Enter data only in aqua shaded cells
H Comments on typical building sizes based on internet search results.

Trip Generation Planner (ITE 7th Edition)

Weekday Trip Generation ***Project Name*** Nelson Ranch Homes
Trips Based on Average Rates or Equations ***Project Number*** 097311001.1

Kimley-Horn and Associates, Inc.

ITE Code	Land Use Description	Independent Variable	No. of Units	Avg Rate or Eq	Trip Rates: Daily Rate	AM Rate	PM Rate	Total Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out	New Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out
210	Single-Family Detached Housing	Dwelling Unit(s)	354	Avg	9.57	0.75	1.01	3388	266	358	67	199	226	132	3388	266	358	67	199	226	132
220	Apartment	Dwelling Unit(s)		Avg	6.72	0.51	0.62														
221	Low-Rise Apartment	Occ. Dwelling Unit(s)		Avg	6.59	0.46	0.58														
222	High-Rise Apartment	Dwelling Unit(s)		Avg	4.20	0.30	0.35														
223	Mid-Rise Apartment	Dwelling Unit(s)		Avg	*	0.30	0.39														
224	Rental Townhouse	Dwelling Unit(s)		Avg	*	0.70	0.72														
230	Residential Condominium/Townhouse	Dwelling Unit(s)		Avg	5.86	0.44	0.52														
231	Low-Rise Residential Condominium/Townhouse	Dwelling Unit(s)		Avg	*	0.67	0.78														
232	High-Rise Residential Condominium/Townhouse	Dwelling Unit(s)		Avg	4.18	0.34	0.38														
233	Luxury Condominium/Townhouse	Occ. Dwelling Unit(s)		Avg	*	0.56	0.55														
240	Mobile Home Park	Occ. Dwelling Unit(s)		Avg	4.99	0.44	0.59														
251	Senior Adult Housing-Detached	Dwelling Unit(s)		Avg	3.71	0.20	0.26														
251X-a	Senior Adult Housing (CA Pulte Dell Webb)	Dwelling Unit(s)		Avg	3.96	0.17	0.23														
252	Senior Adult Housing-Attached	Occ. Dwelling Unit(s)		Avg	3.48	0.08	0.11														
253	Congregate Care Facility	Dwelling Unit(s)		Avg	2.02	0.06	0.17														
254	Assisted Living	Bed(s)		Avg	2.66	0.14	0.22														
255	Continuing Care Retirement Community	Occupied Unit(s)		Avg	2.81	0.18	0.29														
260	Recreational Homes	Dwelling Unit(s)		Avg	3.16	0.16	0.26														
270	Residential Planned Unit Development	Dwelling Unit(s)		Avg	7.50	0.51	0.62														
							Totals	3388	266	358	67	199	226	132	3388	266	358	67	199	226	132
					14%		Reduction	474	37	50	9	28	32	18							
							Grand Total	2914	229	308	58	171	194	114							

Notes:
(1) AM and/or PM rates correspond to peak hour of generator

A Trip generation data from ITE *Trip Generation*, 7th Edition
B AM/PM rates correspond to peak of adjacent street traffic (if data available)
C Includes weekday rates only
D Total trips include pass-by trips
E Pass-by rates from ITE *Trip Generation Handbook*, 2004
F Worksheet is intended as a planning tool. Verify results w/ ITE *Trip Generation*, 7th Edition
G Enter data only in aqua shaded cells
H Comments on typical building sizes based on internet search results.

Trip Generation Planner (ITE 7th Edition)

Weekday Trip Generation ***Project Name*** Meadow Creek Crossing
Trips Based on Average Rates or Equations ***Project Number*** 097311001.1

Kimley-Horn and Associates, Inc.

ITE Code	Land Use Description	Independent Variable	No. of Units	Avg Rate or Eq	Trip Rates: Daily Rate	AM Rate	PM Rate	Total Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out	New Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out
210	Single-Family Detached Housing	Dwelling Unit(s)	49	Avg	9.57	0.75	1.01	469	37	49	9	28	31	18	469	37	49	9	28	31	18
220	Apartment	Dwelling Unit(s)		Avg	6.72	0.51	0.62														
221	Low-Rise Apartment	Occ. Dwelling Unit(s)		Avg	6.59	0.46	0.58														
222	High-Rise Apartment	Dwelling Unit(s)		Avg	4.20	0.30	0.35														
223	Mid-Rise Apartment	Dwelling Unit(s)		Avg	*	0.30	0.39														
224	Rental Townhouse	Dwelling Unit(s)		Avg	*	0.70	0.72														
230	Residential Condominium/Townhouse	Dwelling Unit(s)		Avg	5.86	0.44	0.52														
231	Low-Rise Residential Condominium/Townhouse	Dwelling Unit(s)		Avg	*	0.67	0.78														
232	High-Rise Residential Condominium/Townhouse	Dwelling Unit(s)		Avg	4.18	0.34	0.38														
233	Luxury Condominium/Townhouse	Occ. Dwelling Unit(s)		Avg	*	0.56	0.55														
240	Mobile Home Park	Occ. Dwelling Unit(s)		Avg	4.99	0.44	0.59														
251	Senior Adult Housing-Detached	Dwelling Unit(s)		Avg	3.71	0.20	0.26														
251X-a	Senior Adult Housing (CA Pulte Dell Webb)	Dwelling Unit(s)		Avg	3.96	0.17	0.23														
252	Senior Adult Housing-Attached	Occ. Dwelling Unit(s)		Avg	3.48	0.08	0.11														
253	Congregate Care Facility	Dwelling Unit(s)		Avg	2.02	0.06	0.17														
254	Assisted Living	Bed(s)		Avg	2.66	0.14	0.22														
255	Continuing Care Retirement Community	Occupied Unit(s)		Avg	2.81	0.18	0.29														
260	Recreational Homes	Dwelling Unit(s)		Avg	3.16	0.16	0.26														
270	Residential Planned Unit Development	Dwelling Unit(s)		Avg	7.50	0.51	0.62														
							Totals	469	37	49	9	28	31	18	469	37	49	9	28	31	18
					14%		Reduction	66	5	7	1	4	4	3							
							Grand Total	403	32	42	8	24	27	15							

Notes:
(1) AM and/or PM rates correspond to peak hour of generator

A Trip generation data from ITE *Trip Generation*, 7th Edition
B AM/PM rates correspond to peak of adjacent street traffic (if data available)
C Includes weekday rates only
D Total trips include pass-by trips
E Pass-by rates from ITE *Trip Generation Handbook*, 2004
F Worksheet is intended as a planning tool. Verify results w/ ITE *Trip Generation*, 7th Edition
G Enter data only in aqua shaded cells
H Comments on typical building sizes based on internet search results.

Trip Generation Planner (ITE 7th Edition)

Weekday Trip Generation | ***Project Name*** | Sand Creek Ranch
Trips Based on Average Rates or Equations | ***Project Number*** | 097311001.1

Kimley-Horn and Associates, Inc.

ITE Code	Land Use Description	Independent Variable	No. of Units	Avg Rate or Eq	Trip Rates: Daily Rate	AM Rate	PM Rate	Total Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out	New Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out
210	Single-Family Detached Housing	Dwelling Unit(s)	490	Avg	9.57	0.75	1.01	4689	368	495	92	276	312	183	4689	368	495	92	276	312	183
220	Apartment	Dwelling Unit(s)		Avg	6.72	0.51	0.62														
221	Low-Rise Apartment	Occ. Dwelling Unit(s)		Avg	6.59	0.46	0.58														
222	High-Rise Apartment	Dwelling Unit(s)		Avg	4.20	0.30	0.35														
223	Mid-Rise Apartment	Dwelling Unit(s)		Avg	*	0.30	0.39														
224	Rental Townhouse	Dwelling Unit(s)		Avg	*	0.70	0.72														
230	Residential Condominium/Townhouse	Dwelling Unit(s)		Avg	5.86	0.44	0.52														
231	Low-Rise Residential Condominium/Townhouse	Dwelling Unit(s)		Avg	*	0.67	0.78														
232	High-Rise Residential Condominium/Townhouse	Dwelling Unit(s)		Avg	4.18	0.34	0.38														
233	Luxury Condominium/Townhouse	Occ. Dwelling Unit(s)		Avg	*	0.56	0.55														
240	Mobile Home Park	Occ. Dwelling Unit(s)		Avg	4.99	0.44	0.59														
251	Senior Adult Housing-Detached	Dwelling Unit(s)		Avg	3.71	0.20	0.26														
251X-a	Senior Adult Housing (CA Pulte Dell Webb)	Dwelling Unit(s)		Avg	3.96	0.17	0.23														
252	Senior Adult Housing-Attached	Occ. Dwelling Unit(s)		Avg	3.48	0.08	0.11														
253	Congregate Care Facility	Dwelling Unit(s)		Avg	2.02	0.06	0.17														
254	Assisted Living	Bed(s)		Avg	2.66	0.14	0.22														
255	Continuing Care Retirement Community	Occupied Unit(s)		Avg	2.81	0.18	0.29														
260	Recreational Homes	Dwelling Unit(s)		Avg	3.16	0.16	0.26														
270	Residential Planned Unit Development	Dwelling Unit(s)		Avg	7.50	0.51	0.62														
							Totals	4689	368	495	92	276	312	183	4689	368	495	92	276	312	183
					14%		Reduction	656	52	69	13	39	44	26							
							Grand Total	4033	316	426	79	237	268	157							

Notes:
(1) AM and/or PM rates correspond to peak hour of generator

A Trip generation data from ITE *Trip Generation*, 7th Edition
B AM/PM rates correspond to peak of adjacent street traffic (if data available)
C Includes weekday rates only
D Total trips include pass-by trips
E Pass-by rates from ITE *Trip Generation Handbook*, 2004
F Worksheet is intended as a planning tool. Verify results w/ ITE *Trip Generation*, 7th Edition
G Enter data only in aqua shaded cells
H Comments on typical building sizes based on internet search results.

Trip Generation Planner (ITE 7th Edition)

Weekday Trip Generation | ***Project Name*** | Mercy Housing
Trips Based on Average Rates or Equations | ***Project Number*** | 097311001.1

Kimley-Horn and Associates, Inc.

ITE Code	Land Use Description	Independent Variable	No. of Units	Avg Rate or Eq	Trip Rates: Daily Rate	AM Rate	PM Rate	Total Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out	New Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out
210	Single-Family Detached Housing	Dwelling Unit(s)	96	Avg	9.57	0.75	1.01	919	72	97	18	54	61	36	919	72	97	18	54	61	36
220	Apartment	Dwelling Unit(s)		Avg	6.72	0.51	0.62														
221	Low-Rise Apartment	Occ. Dwelling Unit(s)		Avg	6.59	0.46	0.58														
222	High-Rise Apartment	Dwelling Unit(s)		Avg	4.20	0.30	0.35														
223	Mid-Rise Apartment	Dwelling Unit(s)		Avg	*	0.30	0.39														
224	Rental Townhouse	Dwelling Unit(s)		Avg	*	0.70	0.72														
230	Residential Condominium/Townhouse	Dwelling Unit(s)		Avg	5.86	0.44	0.52														
231	Low-Rise Residential Condominium/Townhouse	Dwelling Unit(s)		Avg	*	0.67	0.78														
232	High-Rise Residential Condominium/Townhouse	Dwelling Unit(s)		Avg	4.18	0.34	0.38														
233	Luxury Condominium/Townhouse	Occ. Dwelling Unit(s)		Avg	*	0.56	0.55														
240	Mobile Home Park	Occ. Dwelling Unit(s)		Avg	4.99	0.44	0.59														
251	Senior Adult Housing-Detached	Dwelling Unit(s)		Avg	3.71	0.20	0.26														
251X-a	Senior Adult Housing (CA Pulte Dell Webb)	Dwelling Unit(s)		Avg	3.96	0.17	0.23														
252	Senior Adult Housing-Attached	Occ. Dwelling Unit(s)		Avg	3.48	0.08	0.11														
253	Congregate Care Facility	Dwelling Unit(s)		Avg	2.02	0.06	0.17														
254	Assisted Living	Bed(s)		Avg	2.66	0.14	0.22														
255	Continuing Care Retirement Community	Occupied Unit(s)		Avg	2.81	0.18	0.29														
260	Recreational Homes	Dwelling Unit(s)		Avg	3.16	0.16	0.26														
270	Residential Planned Unit Development	Dwelling Unit(s)		Avg	7.50	0.51	0.62														
							Totals	919	72	97	18	54	61	36	919	72	97	18	54	61	36
					14%		Reduction	129	10	14	3	8	9	5							
							Grand Total	790	62	83	15	46	52	31							

Notes:
(1) AM and/or PM rates correspond to peak hour of generator

A Trip generation data from ITE *Trip Generation*, 7th Edition
B AM/PM rates correspond to peak of adjacent street traffic (if data available)
C Includes weekday rates only
D Total trips include pass-by trips
E Pass-by rates from ITE *Trip Generation Handbook*, 2004
F Worksheet is intended as a planning tool. Verify results w/ ITE *Trip Generation*, 7th Edition
G Enter data only in aqua shaded cells
H Comments on typical building sizes based on internet search results.

Trip Generation Planner (ITE 7th Edition)

Weekday Trip Generation ***Project Name*** Williamson Ranch Plaza III, IV
Trips Based on Average Rates or Equations ***Project Number*** 097311001.1

Kimley-Horn and Associates, Inc.

ITE Code	Land Use Description	Independent Variable	No. of Units	Avg Rate or Eq	Trip Rates: Daily Rate	AM Rate	PM Rate	Total Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out	New Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out
710	General Office Building *(1)*	1,000 Sq Ft	12	Avg	11.01	1.55	1.49	132	19	18	17	2	3	15	132	19	18	17	2	3	15
714	Corporate Headquarters *(1)*	1,000 Sq Ft		Avg	7.98	1.49	1.40														
715	Single Tenant Office Building *(1)*	1,000 Sq Ft		Avg	11.57	1.80	1.73														
720	Medical-Dental Office Building	1,000 Sq Ft		Avg	36.13	2.48	3.72														
730	Government Office Building *(1)*	1,000 Sq Ft		Avg	68.93	5.88	11.03														
731	State Motor Vehicles Department	1,000 Sq Ft		Avg	166.02	9.84	17.09														
732	US Post Office	1,000 Sq Ft		Avg	108.19	8.02	10.89														
733	Government Office Complex	1,000 Sq Ft		Avg	27.92	2.21	2.85														
750	Office Park *(1)*	1,000 Sq Ft		Avg	11.42	1.74	1.50														
760	Research and Development Center *(1)*	1,000 Sq Ft		Avg	8.11	1.24	1.08														
770	Business Park *(1)*	1,000 Sq Ft		Avg	12.76	1.43	1.29														
							Totals	132	19	18	17	2	3	15							
					23%		Reduction	30	4	4	4	0	1	3							
							Grand Total	102	15	14	13	2	2	12							

A Trip generation data from ITE *Trip Generation*, 7th Edition
B AM/PM rates correspond to peak of adjacent street traffic (if data available)
C Includes weekday rates only
D Total trips include pass-by trips
E Pass-by rates from ITE *Trip Generation Handbook*, 2004
F Worksheet is intended as a planning tool. Verify results w/ ITE *Trip Generation*, 7th Edition
G Enter data only in aqua shaded cells
H Comments on typical building sizes based on internet search results.

Trip Generation Planner (ITE 7th Edition)

Weekday Trip Generation ***Project Name*** Rose Garden
Trips Based on Average Rates or Equations ***Project Number*** 097311001.1

Kimley-Horn and Associates, Inc.

ITE Code	Land Use Description	Independent Variable	No. of Units	Avg Rate or Eq	Trip Rates: Daily Rate	AM Rate	PM Rate	Total Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out	New Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out
210	Single-Family Detached Housing	Dwelling Unit(s)	55	Avg	9.57	0.75	1.01	526	41	56	10	31	35	21	526	41	56	10	31	35	21
220	Apartment	Dwelling Unit(s)		Avg	6.72	0.51	0.62														
221	Low-Rise Apartment	Occ. Dwelling Unit(s)		Avg	6.59	0.46	0.58														
222	High-Rise Apartment	Dwelling Unit(s)		Avg	4.20	0.30	0.35														
223	Mid-Rise Apartment	Dwelling Unit(s)		Avg	*	0.30	0.39														
224	Rental Townhouse	Dwelling Unit(s)		Avg	*	0.70	0.72														
230	Residential Condominium/Townhouse	Dwelling Unit(s)		Avg	5.86	0.44	0.52														
231	Low-Rise Residential Condominium/Townhouse	Dwelling Unit(s)		Avg	*	0.67	0.78														
232	High-Rise Residential Condominium/Townhouse	Dwelling Unit(s)		Avg	4.18	0.34	0.38														
233	Luxury Condominium/Townhouse	Occ. Dwelling Unit(s)		Avg	*	0.56	0.55														
240	Mobile Home Park	Occ. Dwelling Unit(s)		Avg	4.99	0.44	0.59														
251	Senior Adult Housing-Detached	Dwelling Unit(s)		Avg	3.71	0.20	0.26														
251X-a	Senior Adult Housing (CA Pulte Dell Webb)	Dwelling Unit(s)		Avg	3.96	0.17	0.23														
252	Senior Adult Housing-Attached	Occ. Dwelling Unit(s)		Avg	3.48	0.08	0.11														
253	Congregate Care Facility	Dwelling Unit(s)		Avg	2.02	0.06	0.17														
254	Assisted Living	Bed(s)		Avg	2.66	0.14	0.22														
255	Continuing Care Retirement Community	Occupied Unit(s)		Avg	2.81	0.18	0.29														
260	Recreational Homes	Dwelling Unit(s)		Avg	3.16	0.16	0.26														
270	Residential Planned Unit Development	Dwelling Unit(s)		Avg	7.50	0.51	0.62														
							Totals	526	41	56	10	31	35	21							
					14%		Reduction	74	6	8	1	4	5	3							
							Grand Total	452	35	48	9	27	30	18							

Notes:
(1) AM and/or PM rates correspond to peak hour of generator

A Trip generation data from ITE *Trip Generation*, 7th Edition
B AM/PM rates correspond to peak of adjacent street traffic (if data available)
C Includes weekday rates only
D Total trips include pass-by trips
E Pass-by rates from ITE *Trip Generation Handbook*, 2004
F Worksheet is intended as a planning tool. Verify results w/ ITE *Trip Generation*, 7th Edition
G Enter data only in aqua shaded cells
H Comments on typical building sizes based on internet search results.

Trip Generation Planner (ITE 7th Edition)

Weekday Trip Generation ***Project Name*** Wal-Mart Expansion
Trips Based on Average Rates or Equations ***Project Number*** 097311001.1

Kimley-Horn and Associates, Inc.

ITE Code	Land Use Description	Independent Variable	No. of Units	Avg Rate or Eq	Trip Rates: Daily Rate	AM Rate	PM Rate	Total Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out	New Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out
812	Building Materials and Lumber Store	1,000 Sq Ft		Avg	45.16	2.60	4.49														
813	Free Standing Discount Superstore	1,000 Sq Ft	73.506	Avg	49.21	1.84	3.87	3617	135		69	66			3617	135		69	66		
813X-a	Free Standing Discount Superstore (200+ KSF)	1,000 Sq Ft		Avg			5.50														
814	Specialty Retail Center	1,000 Sq Ft		Avg	44.32	*	2.71														
815	Free Standing Discount Store	1,000 Sq Ft	73.506	Avg	56.02	0.84	5.06			372			186	186			309			154	155
816	Hardware/Paint Store	1,000 Sq Ft		Avg	51.29	1.08	4.84														
817	Nursery/Garden Center	1,000 Sq Ft		Avg	36.08	1.31	3.80														
818	Nursery (Wholesale)	1,000 Sq Ft		Avg	39.00	2.40	5.17														
820	Shopping Center	1,000 Sq Ft		Avg	42.94	1.03	3.75														
82X-a	Kohl's Free Standing Department Store	1,000 Sq Ft		Avg	*	0.40	1.90														
823	Factory Outlet Center	1,000 Sq Ft		Avg	26.59	0.67	2.29														
841	New Car Sales	1,000 Sq Ft		Avg	33.34	2.05	2.64														
843	Automobile Parts Sales	1,000 Sq Ft		Avg	61.91	2.21	5.98														
848	Tire Store	1,000 Sq Ft		Avg	24.87	2.89	4.15														
849	Tire Superstore	1,000 Sq Ft		Avg	20.36	1.34	2.11														
850	Supermarket	1,000 Sq Ft		Avg	102.24	3.25	10.45														
							Totals	3617	135	372	69	66	186	186	3617	135	309	69	66	154	155
					53%		Reduction	1917	72	197	37	35	99	99							
							Grand Total	1700	63	175	32	31	87	87							

Notes:
(1) AM and/or PM rates correspond to peak hour of generator

A Trip generation data from ITE *Trip Generation*, 7th Edition
B AM/PM rates correspond to peak of adjacent street traffic (if data available)
C Includes weekday rates only
D Total trips include pass-by trips
E Pass-by rates from ITE *Trip Generation Handbook*, 2004
F Worksheet is intended as a planning tool. Verify results w/ ITE *Trip Generation*, 7th Edition
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H Comments on typical building sizes based on internet search results.

Trip Generation Planner (ITE 7th Edition)

Weekday Trip Generation ***Project Name*** Venture Commerce Center
Trips Based on Average Rates or Equations ***Project Number*** 097311001.1

Kimley-Horn and Associates, Inc.

ITE Code	Land Use Description	Independent Variable	No. of Units	Avg Rate or Eq	Trip Rates: Daily Rate	AM Rate	PM Rate	Total Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out	New Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out
710	General Office Building *(1)*	1,000 Sq Ft	92.155	Avg	11.01	1.55	1.49	1015	143	137	126	17	23	114	1015	143	137	126	17	23	114
714	Corporate Headquarters *(1)*	1,000 Sq Ft		Avg	7.98	1.49	1.40														
715	Single Tenant Office Building *(1)*	1,000 Sq Ft		Avg	11.57	1.80	1.73														
720	Medical-Dental Office Building	1,000 Sq Ft		Avg	36.13	2.48	3.72														
730	Government Office Building *(1)*	1,000 Sq Ft		Avg	68.93	5.88	11.03														
731	State Motor Vehicles Department	1,000 Sq Ft		Avg	166.02	9.84	17.09														
732	US Post Office	1,000 Sq Ft		Avg	108.19	8.02	10.89														
733	Government Office Complex	1,000 Sq Ft		Avg	27.92	2.21	2.85														
750	Office Park *(1)*	1,000 Sq Ft		Avg	11.42	1.74	1.50														
760	Research and Development Center *(1)*	1,000 Sq Ft		Avg	8.11	1.24	1.08														
770	Business Park *(1)*	1,000 Sq Ft		Avg	12.76	1.43	1.29														
							Totals	1015	143	137	126	17	23	114	1015	143	137	126	17	23	114
					23%		Reduction	233	33	32	29	4	5	26							
							Grand Total	782	110	105	97	13	18	88							

Notes:
(1) AM and/or PM rates correspond to peak hour of generator

A Trip generation data from ITE *Trip Generation*, 7th Edition
B AM/PM rates correspond to peak of adjacent street traffic (if data available)
C Includes weekday rates only
D Total trips include pass-by trips
E Pass-by rates from ITE *Trip Generation Handbook*, 2004
F Worksheet is intended as a planning tool. Verify results w/ ITE *Trip Generation*, 7th Edition
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H Comments on typical building sizes based on internet search results.

Trip Generation Planner (ITE 7th Edition)

Weekday Trip Generation ***Project Name*** Amber Park
Trips Based on Average Rates or Equations ***Project Number*** 097311001.1

Kimley-Horn and Associates, Inc.

ITE Code	Land Use Description	Independent Variable	No. of Units	Avg Rate or Eq	Trip Rates: Daily Rate	AM Rate	PM Rate	Total Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out	New Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out
210	Single-Family Detached Housing	Dwelling Unit(s)	118	Avg	9.57	0.75	1.01	1129	89	119	22	67	75	44	1129	89	119	22	67	75	44
220	Apartment	Dwelling Unit(s)		Avg	6.72	0.51	0.62														
221	Low-Rise Apartment	Occ. Dwelling Unit(s)		Avg	6.59	0.46	0.56														
222	High-Rise Apartment	Dwelling Unit(s)		Avg	4.20	0.30	0.35														
223	Mid-Rise Apartment	Dwelling Unit(s)		Avg	*	0.30	0.39														
224	Rental Townhouse	Dwelling Unit(s)		Avg	*	0.70	0.72														
230	Residential Condominium/Townhouse	Dwelling Unit(s)		Avg	5.86	0.44	0.52														
231	Low-Rise Residential Condominium/Townhouse	Dwelling Unit(s)		Avg	*	0.67	0.78														
232	High-Rise Residential Condominium/Townhouse	Dwelling Unit(s)		Avg	4.18	0.34	0.38														
233	Luxury Condominium/Townhouse	Occ. Dwelling Unit(s)		Avg	*	0.56	0.55														
240	Mobile Home Park	Occ. Dwelling Unit(s)		Avg	4.99	0.44	0.59														
251	Senior Adult Housing-Detached	Dwelling Unit(s)		Avg	3.71	0.20	0.26														
251X-a	Senior Adult Housing (CA Pulte Dell Webb)	Dwelling Unit(s)		Avg	3.96	0.17	0.23														
252	Senior Adult Housing-Attached	Occ. Dwelling Unit(s)		Avg	3.48	0.08	0.11														
253	Congregate Care Facility	Dwelling Unit(s)		Avg	2.02	0.06	0.17														
254	Assisted Living	Bed(s)		Avg	2.66	0.14	0.22														
255	Continuing Care Retirement Community	Occupied Unit(s)		Avg	2.81	0.18	0.29														
260	Recreational Homes	Dwelling Unit(s)		Avg	3.16	0.16	0.26														
270	Residential Planned Unit Development	Dwelling Unit(s)		Avg	7.50	0.51	0.62														
							Totals	1129	89	119	22	67	75	44	1129	89	119	22	67	75	44
					14%		Reduction	158	12	17	3	9	11	6							
							Grand Total	971	77	102	19	58	65	38							

Notes:
(1) AM and/or PM rates correspond to peak hour of generator

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C Includes weekday rates only
D Total trips include pass-by trips
E Pass-by rates from ITE *Trip Generation Handbook*, 2004
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Trip Generation Planner (ITE 7th Edition)

Weekday Trip Generation ***Project Name*** Arcadia Shopping Center
Trips Based on Average Rates or Equations ***Project Number*** 097311001.1

Kimley-Horn and Associates, Inc.

ITE Code	Land Use Description	Independent Variable	No. of Units	Avg Rate or Eq	Trip Rates: Daily Rate	AM Rate	PM Rate	Total Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out	New Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out
710	General Office Building *(1)*	1,000 Sq Ft	1.25	Avg	11.01	1.55	1.49	14	2	2	2			2	14	2	2	2			2
714	Corporate Headquarters *(1)*	1,000 Sq Ft		Avg	7.68	1.49	1.40														
715	Single Tenant Office Building *(1)*	1,000 Sq Ft		Avg	11.57	1.80	1.73														
720	Medical-Dental Office Building	1,000 Sq Ft		Avg	36.13	2.46	3.72														
730	Government Office Building *(1)*	1,000 Sq Ft		Avg	68.93	5.89	11.03														
731	State Motor Vehicles Department	1,000 Sq Ft		Avg	166.02	9.84	17.09														
732	US Post Office	1,000 Sq Ft		Avg	108.19	8.02	10.89														
733	Government Office Complex	1,000 Sq Ft		Avg	27.92	2.21	2.65														
750	Office Park *(1)*	1,000 Sq Ft		Avg	11.42	1.74	1.50														
760	Research and Development Center *(1)*	1,000 Sq Ft		Avg	8.11	1.24	1.08														
770	Business Park *(1)*	1,000 Sq Ft		Avg	12.76	1.43	1.29														
812	Building Materials and Lumber Store	1,000 Sq Ft		Avg	45.16	2.60	4.49														
813	Free Standing Discount Superstore	1,000 Sq Ft		Avg	49.21	1.84	3.87														
813X-a	Free Standing Discount Superstore (200+ KSF)	1,000 Sq Ft		Avg			5.50														
814	Specialty Retail Center	1,000 Sq Ft		Avg	44.32	*	2.71														
815	Free Standing Discount Store	1,000 Sq Ft		Avg	56.02	0.84	5.06														
816	Hardware/Paint Store	1,000 Sq Ft		Avg	51.29	1.08	4.84														
817	Nursery/Garden Center	1,000 Sq Ft		Avg	36.08	1.31	3.80														
818	Nursery (Wholesale)	1,000 Sq Ft		Avg	39.00	2.40	5.17														
820	Shopping Center	1,000 Sq Ft	26.7	Avg	42.94	1.03	3.75	1146	28	100	17	11	48	52	1146	28	68	17	11	32	36
82X-a	Kohl's Free Standing Department Store	1,000 Sq Ft		Avg	*	0.40	1.90														
823	Factory Outlet Center	1,000 Sq Ft		Avg	26.59	0.67	2.29														
841	New Car Sales	1,000 Sq Ft		Avg	33.34	2.05	2.64														
843	Automobile Parts Sales	1,000 Sq Ft		Avg	61.91	2.21	5.98														
848	Tire Store	1,000 Sq Ft		Avg	24.87	2.89	4.15														
849	Tire Superstore	1,000 Sq Ft		Avg	20.36	1.34	2.11														
850	Supermarket	1,000 Sq Ft		Avg	102.24	3.25	10.45														
851	Convenience Market (Open 24 Hours)	1,000 Sq Ft		Avg	737.99	67.03	52.41														
852	Convenience Market (Open 15-16 Hours)	1,000 Sq Ft		Avg	*	31.02	34.57														
853	Convenience Market w/ Gasoline Pumps	Fueling Position(s)		Avg	542.60	17.17	19.22														
854	Discount Supermarket	1,000 Sq Ft		Avg	96.82	2.74	8.90														
860	Wholesale Market	1,000 Sq Ft		Avg	6.73	0.50	0.21														
861	Discount Club	1,000 Sq Ft		Avg	41.80	0.56	4.24														
862	Home Improvement Superstore	1,000 Sq Ft		Avg	29.80	1.20	2.45														
863	Electronics Superstore	1,000 Sq Ft		Avg	45.04	0.28	4.50														
864	Toy/Children's Superstore	1,000 Sq Ft		Avg	*	*	4.99														
865	Baby Superstore	1,000 Sq Ft		Avg	*	*	1.62														
866	Pet Supply Superstore	1,000 Sq Ft		Avg	*	*	4.96														
867	Office Supply Superstore	1,000 Sq Ft		Avg	*	*	3.40														
868	Book Superstore	1,000 Sq Ft		Avg	*	*	19.53														
869	Discount Home Furnishing Superstore	1,000 Sq Ft		Avg	47.81	*	4.01														
870	Apparel Store	1,000 Sq Ft		Avg	66.40	1.00	3.83														
879	Arts and Crafts Store *(1)*	1,000 Sq Ft		Avg	56.55	4.65	6.21														
880	Pharmacy/Drugstore w/o Drive-Through Window	1,000 Sq Ft		Avg	90.06	3.20	8.42														
881	Pharmacy/Drugstore w/ Drive-Through Window	1,000 Sq Ft		Avg	88.16	2.66	8.62														
890	Furniture Store	1,000 Sq Ft		Avg	5.06	0.17	0.46														
896	Video Rental Store	1,000 Sq Ft		Avg	*	*	13.60														
							Totals	1160	30	102	19	11	48	54	1160	30	68	19	11	32	36
					53%		Reduction	615	16	54	10	6	25	29							
							Grand Total	545	14	48	9	5	23	25							

Notes:
(1) AM and/or PM rates correspond to peak hour of generator

A Trip generation data from ITE *Trip Generation*, 7th Edition
B AM/PM rates correspond to peak of adjacent street traffic (if data available)
C Includes weekday rates only
D Total trips include pass-by trips
E Pass-by rates from ITE *Trip Generation Handbook*, 2004
F Worksheet is intended as a planning tool. Verify results w/ ITE *Trip Generation*, 7th Edition
G Enter data only in aqua shaded cells
H Comments on typical building sizes based on internet search results.

Trip Generation Planner (ITE 7th Edition)

Weekday Trip Generation ***Project Name*** Linda Budge- KFC/A&W
Trips Based on Average Rates or Equations ***Project Number*** 097311001.1

Kimley-Horn and Associates, Inc.

ITE Code	Land Use Description	Independent Variable	No. of Units	Avg Rate or Eq	Trip Rates: Daily Rate	AM Rate	PM Rate	Total Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out	New Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out
911	Walk-In Bank	1,000 Sq Ft		Avg	156.48	4.07	33.15														
912	Drive-In Bank	1,000 Sq Ft		Avg	246.49	12.34	45.74														
931	Quality Restaurant	1,000 Sq Ft		Avg	89.95	0.81	7.49														
932	High-Turnover (Sit-Down) Restaurant	1,000 Sq Ft		Avg	127.15	11.52	10.92														
933	Fast-Food Restaurant w/o D.T (General)	1,000 Sq Ft		Avg	716.00	43.87	26.15														
933-1	Fast-Food Restaurant w/o D.T - Yogurt	1,000 Sq Ft		Avg	*	*	15.12														
933-2	Fast-Food Restaurant w/o D.T - Coffee	1,000 Sq Ft		Avg	*	73.03	28.79														
933-3	Fast-Food Restaurant w/o D.T - Donut/Ice Cream	1,000 Sq Ft		Avg	*	*	20.00														
933-4	Fast-Food Restaurant w/o D.T - Donut/Sandwich	1,000 Sq Ft		Avg	*	59.75	13.00														
933-5	Fast-Food Restaurant w/o D.T - Bagel	1,000 Sq Ft		Avg	*	70.22	*														
933-6	Fast-Food Restaurant w/o D.T - Bread	1,000 Sq Ft		Avg	*	4.33	28.00														
934	Fast-Food Restaurant w/ D.T. (General)	1,000 Sq Ft	3.612	Avg	496.12	53.11	34.64	1792	192	125	98	94	65	60	1792	98	63	50	48	33	30
934-1	Fast-Food Restaurant w/ D.T.- Coffee/Bread/Sand	1,000 Sq Ft		Avg	*	183.07	38.90														
935	Fast-Food Restaurant w/ D.T. No Indoor Seats	1,000 Sq Ft		Avg	*	*	153.85														
935-1	Fast-Food Restaurant w/ D.T. Coffee/Espresso	1,000 Sq Ft		Avg	1400.00	260.00	60.00														
936	Drinking Place	1,000 Sq Ft		Avg	*	*	11.34														
941	Quick Lubrication Vehicle Shop	Servicing Position(s)		Avg	40.00	3.00	5.19														
942	Automobile Care Center	1,000 Sq Ft		Avg	*	2.94	3.38														
943	Automobile Parts and Service Center	1,000 Sq Ft		Avg	*	*	4.46														
944	Gasoline/Service Station	Fueling Position(s)		Avg	168.56	12.07	13.86														
945	Gasoline Station w/ Convenience Market	Fueling Position(s)		Avg	162.78	10.06	13.38														
946	Gasoline Station w/ Conv. Mkt. & Car Wash	Fueling Position(s)		Avg	152.84	10.64	13.33														
947	Self-Service Car Wash *(1)*	Wash Stall(s)		Avg	108.00	8.00	5.54														
948	Automated Car Wash	1,000 Sq Ft		Avg	*	*	14.12														
							Totals	1792	192	125	98	94	65	60	1792	98	63	50	48	33	30
				49%			Reduction	878	94	61	48	46	32	29							
							Grand Total	914	98	64	50	48	33	31							

Notes:
(1) AM and/or PM rates correspond to peak hour of generator

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H Comments on typical building sizes based on internet search results.

Trip Generation Planner (ITE 7th Edition)

Weekday Trip Generation ***Project Name*** Shady Willow Plaza
Trips Based on Average Rates or Equations ***Project Number*** 097311001.1

Kimley-Horn and Associates, Inc.

ITE Code	Land Use Description	Independent Variable	No. of Units	Avg Rate or Eq	Trip Rates: Daily Rate	AM Rate	PM Rate	Total Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out	New Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out
812	Building Materials and Lumber Store	1,000 Sq Ft		Avg	45.16	2.60	4.49														
813	Free Standing Discount Superstore	1,000 Sq Ft		Avg	49.21	1.84	3.87														
813X-a	Free Standing Discount Superstore (200+ KSF)	1,000 Sq Ft		Avg			5.50														
814	Specialty Retail Center	1,000 Sq Ft		Avg	44.32	*	2.71														
815	Free Standing Discount Store	1,000 Sq Ft		Avg	56.02	0.84	5.06														
816	Hardware/Paint Store	1,000 Sq Ft		Avg	51.29	1.08	4.84														
817	Nursery/Garden Center	1,000 Sq Ft		Avg	36.08	1.31	3.80														
818	Nursery (Wholesale)	1,000 Sq Ft		Avg	39.00	2.40	5.17														
820	Shopping Center	1,000 Sq Ft	29.6	Avg	42.94	1.03	3.75	1271	30	111	18	12	53	58	1271	30	73	18	12	35	38
82X-a	Kohl's Free Standing Department Store	1,000 Sq Ft		Avg	*	0.40	1.90														
823	Factory Outlet Center	1,000 Sq Ft		Avg	26.59	0.67	2.29														
841	New Car Sales	1,000 Sq Ft		Avg	33.34	2.05	2.64														
843	Automobile Parts Sales	1,000 Sq Ft		Avg	61.91	2.21	5.98														
848	Tire Store	1,000 Sq Ft		Avg	24.87	2.89	4.15														
849	Tire Superstore	1,000 Sq Ft		Avg	20.36	1.34	2.11														
850	Supermarket	1,000 Sq Ft		Avg	102.24	3.25	10.45														
851	Convenience Market (Open 24 Hours)	1,000 Sq Ft		Avg	737.99	67.03	52.41														
852	Convenience Market (Open 15-16 Hours)	1,000 Sq Ft		Avg	*	31.02	34.57														
853	Convenience Market w/ Gasoline Pumps	Fueling Position(s)		Avg	542.60	17.17	19.22														
854	Discount Supermarket	1,000 Sq Ft		Avg	96.82	2.74	8.90														
860	Wholesale Market	1,000 Sq Ft		Avg	6.73	0.50	0.21														
861	Discount Club	1,000 Sq Ft		Avg	41.80	0.56	4.24														
862	Home Improvement Superstore	1,000 Sq Ft		Avg	29.80	1.20	2.45														
863	Electronics Superstore	1,000 Sq Ft		Avg	45.04	0.28	4.50														
864	Toy/Children's Superstore	1,000 Sq Ft		Avg	*	*	4.99														
865	Baby Superstore	1,000 Sq Ft		Avg	*	*	1.82														
866	Pet Supply Superstore	1,000 Sq Ft		Avg	*	*	4.96														
867	Office Supply Superstore	1,000 Sq Ft		Avg	*	*	3.40														
868	Book Superstore	1,000 Sq Ft		Avg	*	*	19.53														
869	Discount Home Furnishing Superstore	1,000 Sq Ft		Avg	47.81	*	4.01														
870	Apparel Store	1,000 Sq Ft		Avg	66.40	1.00	3.83														
879	Arts and Crafts Store *(1)*	1,000 Sq Ft		Avg	58.55	4.65	6.21														
880	Pharmacy/Drugstore w/o Drive-Through Window	1,000 Sq Ft		Avg	90.06	3.20	8.42														
881	Pharmacy/Drugstore w/ Drive-Through Window	1,000 Sq Ft		Avg	88.16	2.66	8.62														
890	Furniture Store	1,000 Sq Ft		Avg	5.06	0.17	0.46														
896	Video Rental Store	1,000 Sq Ft		Avg	*	*	13.60														
							Totals	1271	30	111	18	12	53	58	1271	30	73	18	12	35	38
				53%			Reduction	674	16	59	10	6	28	31							
							Grand Total	597	14	52	8	6	25	27							

Notes:
(1) AM and/or PM rates correspond to peak hour of generator

A Trip generation data from ITE *Trip Generation*, 7th Edition
B AM/PM rates correspond to peak of adjacent street traffic (if data available)
C Includes weekday rates only
D Total trips include pass-by trips
E Pass-by rates from ITE *Trip Generation Handbook*, 2004
F Worksheet is intended as a planning tool. Verify results w/ ITE *Trip Generation*, 7th Edition
G Enter data only in aqua shaded cells
H Comments on typical building sizes based on internet search results.

Trip Generation Planner (ITE 7th Edition)

Weekday Trip Generation ***Project Name*** Tri-City Plaza
Trips Based on Average Rates or Equations ***Project Number*** 097311001.1

Kimley-Horn and Associates, Inc.

ITE Code	Land Use Description	Independent Variable	No. of Units	Avg Rate or Eq	Trip Rates: Daily Rate	AM Rate	PM Rate	Total Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out	New Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out
812	Building Materials and Lumber Store	1,000 Sq Ft		Avg	45.16	2.60	4.49														
813	Free Standing Discount Superstore	1,000 Sq Ft		Avg	49.21	1.84	3.87														
813X-a	Free Standing Discount Superstore (200+ KSF)	1,000 Sq Ft		Avg			5.50														
814	Specialty Retail Center	1,000 Sq Ft		Avg	44.32	*	2.71														
815	Free Standing Discount Store	1,000 Sq Ft		Avg	56.02	0.84	5.06														
816	Hardware/Paint Store	1,000 Sq Ft		Avg	51.29	1.08	4.84														
817	Nursery/Garden Center	1,000 Sq Ft		Avg	36.08	1.31	3.80														
818	Nursery (Wholesale)	1,000 Sq Ft		Avg	39.00	2.40	5.17														
820	Shopping Center	1,000 Sq Ft	50.647	Avg	42.94	1.03	3.75	2175	52	190	32	20	91	99	2175	52	125	32	20	60	65
82X-a	Kohl's Free Standing Department Store	1,000 Sq Ft		Avg	*	0.40	1.90														
823	Factory Outlet Center	1,000 Sq Ft		Avg	26.59	0.67	2.29														
841	New Car Sales	1,000 Sq Ft		Avg	33.34	2.05	2.64														
843	Automobile Parts Sales	1,000 Sq Ft		Avg	61.91	2.21	5.98														
848	Tire Store	1,000 Sq Ft		Avg	24.87	2.89	4.15														
849	Tire Superstore	1,000 Sq Ft		Avg	20.36	1.34	2.11														
850	Supermarket	1,000 Sq Ft		Avg	102.24	3.25	10.45														
851	Convenience Market (Open 24 Hours)	1,000 Sq Ft		Avg	737.99	67.03	52.41														
852	Convenience Market (Open 15-16 Hours)	1,000 Sq Ft		Avg	*	31.02	34.57														
853	Convenience Market w/ Gasoline Pumps	Fueling Position(s)		Avg	542.60	17.17	19.22														
854	Discount Supermarket	1,000 Sq Ft		Avg	96.82	2.74	8.90														
860	Wholesale Market	1,000 Sq Ft		Avg	6.73	0.50	0.21														
861	Discount Club	1,000 Sq Ft		Avg	41.80	0.56	4.24														
862	Home Improvement Superstore	1,000 Sq Ft		Avg	29.80	1.20	2.45														
863	Electronics Superstore	1,000 Sq Ft		Avg	45.04	0.28	4.50														
864	Toy/Children's Superstore	1,000 Sq Ft		Avg	*	*	4.99														
865	Baby Superstore	1,000 Sq Ft		Avg	*	*	1.82														
866	Pet Supply Superstore	1,000 Sq Ft		Avg	*	*	4.96														
867	Office Supply Superstore	1,000 Sq Ft		Avg	*	*	3.40														
868	Book Superstore	1,000 Sq Ft		Avg	*	*	19.53														
869	Discount Home Furnishing Superstore	1,000 Sq Ft		Avg	47.81	*	4.01														
870	Apparel Store	1,000 Sq Ft		Avg	66.40	1.00	3.83														
879	Arts and Crafts Store *(1)*	1,000 Sq Ft		Avg	56.55	4.85	6.21														
880	Pharmacy/Drugstore w/o Drive-Through Window	1,000 Sq Ft		Avg	90.06	3.20	8.42														
881	Pharmacy/Drugstore w/ Drive-Through Window	1,000 Sq Ft		Avg	88.16	2.66	8.62														
890	Furniture Store	1,000 Sq Ft		Avg	5.06	0.17	0.46														
896	Video Rental Store	1,000 Sq Ft		Avg	*	*	13.60														
							Totals	2175	52	190	32	20	91	99	2175	52	125	32	20	60	65
					53%		Reduction	1153	28	101	17	11	48	52							
							Grand Total	1022	24	89	15	9	43	47							

Notes:
(1) AM and/or PM rates correspond to peak hour of generator

A Trip generation data from ITE *Trip Generation*, 7th Edition
B AM/PM rates correspond to peak of adjacent street traffic (if data available)
C Includes weekday rates only
D Total trips include pass-by trips
E Pass-by rates from ITE *Trip Generation Handbook*, 2004
F Worksheet is intended as a planning tool. Verify results w/ ITE *Trip Generation*, 7th Edition
G Enter data only in aqua shaded cells
H Comments on typical building sizes based on internet search results.

Trip Generation Planner (ITE 7th Edition)

Weekday Trip Generation ***Project Name*** Visions at Brentwood
Trips Based on Average Rates or Equations ***Project Number*** 097311001.1

Kimley-Horn and Associates, Inc.

ITE Code	Land Use Description	Independent Variable	No. of Units	Avg Rate or Eq	Trip Rates: Daily Rate	AM Rate	PM Rate	Total Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out	New Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out
210	Single-Family Detached Housing	Dwelling Unit(s)	42	Avg	9.57	0.75	1.01	402	32	42	8	24	26	16	402	32	42	8	24	26	16
220	Apartment	Dwelling Unit(s)		Avg	6.72	0.51	0.62														
221	Low-Rise Apartment	Occ. Dwelling Unit(s)		Avg	6.59	0.46	0.58														
222	High-Rise Apartment	Dwelling Unit(s)		Avg	4.20	0.30	0.35														
223	Mid-Rise Apartment	Dwelling Unit(s)		Avg	*	0.30	0.39														
224	Rental Townhouse	Dwelling Unit(s)		Avg	*	0.70	0.72														
230	Residential Condominium/Townhouse	Dwelling Unit(s)		Avg	5.86	0.44	0.52														
231	Low-Rise Residential Condominium/Townhouse	Dwelling Unit(s)		Avg	*	0.67	0.78														
232	High-Rise Residential Condominium/Townhouse	Dwelling Unit(s)		Avg	4.18	0.34	0.38														
233	Luxury Condominium/Townhouse	Occ. Dwelling Unit(s)		Avg	*	0.56	0.55														
240	Mobile Home Park	Occ. Dwelling Unit(s)		Avg	4.99	0.44	0.59														
251	Senior Adult Housing-Detached	Dwelling Unit(s)		Avg	3.71	0.20	0.26														
251X-a	Senior Adult Housing (CA Pulte Dell Webb)	Dwelling Unit(s)		Avg	3.96	0.17	0.23														
252	Senior Adult Housing-Attached	Occ. Dwelling Unit(s)		Avg	3.48	0.08	0.11														
253	Congregate Care Facility	Dwelling Unit(s)		Avg	2.02	0.06	0.17														
254	Assisted Living	Bed(s)		Avg	2.66	0.14	0.22														
255	Continuing Care Retirement Community	Occupied Unit(s)		Avg	2.81	0.18	0.29														
260	Recreational Homes	Dwelling Unit(s)		Avg	3.16	0.16	0.26														
270	Residential Planned Unit Development	Dwelling Unit(s)		Avg	7.50	0.51	0.62														
							Totals	402	32	42	8	24	26	16	402	32	42	8	24	26	16
					14%		Reduction	56	4	6	1	3	4	2							
							Grand Total	346	28	36	7	21	22	14							

Notes:
(1) AM and/or PM rates correspond to peak hour of generator

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B AM/PM rates correspond to peak of adjacent street traffic (if data available)
C Includes weekday rates only
D Total trips include pass-by trips
E Pass-by rates from ITE *Trip Generation Handbook*, 2004
F Worksheet is intended as a planning tool. Verify results w/ ITE *Trip Generation*, 7th Edition
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H Comments on typical building sizes based on internet search results.

Trip Generation Planner (ITE 7th Edition)

Weekday Trip Generation ***Project Name*** Winco Shopping Center
Trips Based on Average Rates or Equations ***Project Number*** 097311001.1

Kimley-Horn and Associates, Inc.

ITE Code	Land Use Description	Independent Variable	No. of Units	Avg Rate or Eq	Trip Rates: Daily Rate	AM Rate	PM Rate	Total Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out	New Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out
812	Building Materials and Lumber Store	1,000 Sq Ft		Avg	45.16	2.60	4.49														
813	Free Standing Discount Superstore	1,000 Sq Ft		Avg	49.21	1.84	3.87														
813X-a	Free Standing Discount Superstore (200+ KSF)	1,000 Sq Ft		Avg			5.50														
814	Specialty Retail Center	1,000 Sq Ft		Avg	44.32	*	2.71														
815	Free Standing Discount Store	1,000 Sq Ft		Avg	56.02	0.84	5.06														
816	Hardware/Paint Store	1,000 Sq Ft		Avg	51.29	1.08	4.84														
817	Nursery/Garden Center	1,000 Sq Ft		Avg	36.08	1.31	3.80														
818	Nursery (Wholesale)	1,000 Sq Ft		Avg	39.00	2.40	5.17														
820	Shopping Center	1,000 Sq Ft	14	Avg	42.94	1.03	3.75	601	14	53	9	5	25	28	601	14	35	9	5	17	18
82X-a	Kohl's Free Standing Department Store	1,000 Sq Ft		Avg	*	0.40	1.90														
823	Factory Outlet Center	1,000 Sq Ft		Avg	26.59	0.67	2.29														
841	New Car Sales	1,000 Sq Ft		Avg	33.34	2.05	2.64														
843	Automobile Parts Sales	1,000 Sq Ft		Avg	61.91	2.21	5.98														
848	Tire Store	1,000 Sq Ft		Avg	24.87	2.89	4.15														
849	Tire Superstore	1,000 Sq Ft		Avg	20.36	1.34	2.11														
850	Supermarket	1,000 Sq Ft		Avg	102.24	3.25	10.45														
851	Convenience Market (Open 24 Hours)	1,000 Sq Ft		Avg	737.99	67.03	52.41														
852	Convenience Market (Open 15-16 Hours)	1,000 Sq Ft		Avg	*	31.02	34.57														
853	Convenience Market w/ Gasoline Pumps	Fueling Position(s)		Avg	542.60	17.17	19.22														
854	Discount Supermarket	1,000 Sq Ft		Avg	96.82	2.74	8.90														
860	Wholesale Market	1,000 Sq Ft		Avg	6.73	0.50	0.21														
861	Discount Club	1,000 Sq Ft		Avg	41.80	0.56	4.24														
862	Home Improvement Superstore	1,000 Sq Ft		Avg	29.80	1.20	2.45														
863	Electronics Superstore	1,000 Sq Ft		Avg	45.04	0.28	4.50														
864	Toy/Children's Superstore	1,000 Sq Ft		Avg	*	*	4.99														
865	Baby Superstore	1,000 Sq Ft		Avg	*	*	1.82														
866	Pet Supply Superstore	1,000 Sq Ft		Avg	*	*	4.96														
867	Office Supply Superstore	1,000 Sq Ft		Avg	*	*	3.40														
868	Book Superstore	1,000 Sq Ft		Avg	*	*	19.53														
869	Discount Home Furnishing Superstore	1,000 Sq Ft		Avg	47.81	*	4.01														
870	Apparel Store	1,000 Sq Ft		Avg	66.40	1.00	3.83														
879	Arts and Crafts Store *(1)*	1,000 Sq Ft		Avg	56.55	4.65	6.21														
880	Pharmacy/Drugstore w/o Drive-Through Window	1,000 Sq Ft		Avg	90.06	3.20	8.42														
881	Pharmacy/Drugstore w/ Drive-Through Window	1,000 Sq Ft		Avg	88.16	2.66	8.62														
890	Furniture Store	1,000 Sq Ft		Avg	5.06	0.17	0.46														
896	Video Rental Store	1,000 Sq Ft		Avg	*	*	13.60														
							Totals	601	14	53	9	5	25	28	601	14	35	9	5	17	18
				53%			Reduction	319	7	28	5	3	13	15							
							Grand Total	282	7	25	4	2	12	13							

Notes:
(1) AM and/or PM rates correspond to peak hour of generator

A Trip generation data from ITE *Trip Generation*, 7th Edition
B AM/PM rates correspond to peak of adjacent street traffic (if data available)
C Includes weekday rates only
D Total trips include pass-by trips
E Pass-by rates from ITE *Trip Generation Handbook*, 2004
F Worksheet is intended as a planning tool. Verify results w/ ITE *Trip Generation*, 7th Edition
G Enter data only in aqua shaded cells
H Comments on typical building sizes based on internet search results.

Trip Generation Planner (ITE 7th Edition)

Weekday Trip Generation ***Project Name*** Brentwood Station
Trips Based on Average Rates or Equations ***Project Number*** 097311001.1

Kimley-Horn and Associates, Inc.

ITE Code	Land Use Description	Independent Variable	No. of Units	Avg Rate or Eq	Trip Rates: Daily Rate	AM Rate	PM Rate	Total Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out	New Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out
481	Zoo	Acre(s)		Avg	114.88	*	*														
488	Soccer Complex	Field(s)		Avg	71.33	1.40	20.67														
490	Tennis Courts	Court(s)		Avg	31.04	1.67	3.88														
491	Racquet/Tennis Club	Court(s)		Avg	36.70	1.31	3.35														
492	Health/Fitness Club	1,000 Sq Ft	65	Avg	32.93	1.21	4.05	2140	79	263	33	46	134	129	2140	79	263	33	46	134	129
493	Athletic Club	1,000 Sq Ft		Avg	43.00	3.06	5.76														
495	Recreational Community Center	1,000 Sq Ft		Avg	22.88	1.62	1.84														
812	Building Materials and Lumber Store	1,000 Sq Ft		Avg	45.16	2.60	4.49														
813	Free Standing Discount Superstore	1,000 Sq Ft		Avg	49.21	1.84	3.87														
813X-a	Free Standing Discount Superstore (200+ KSF)	1,000 Sq Ft		Avg			5.50														
814	Specialty Retail Center	1,000 Sq Ft		Avg	44.32	*	2.71														
815	Free Standing Discount Store	1,000 Sq Ft		Avg	56.02	0.84	5.06														
816	Hardware/Paint Store	1,000 Sq Ft		Avg	51.29	1.08	4.84														
817	Nursery/Garden Center	1,000 Sq Ft		Avg	36.08	1.31	3.80														
818	Nursery (Wholesale)	1,000 Sq Ft		Avg	39.00	2.40	5.17														
820	Shopping Center	1,000 Sq Ft	14.4	Avg	42.94	1.03	3.75	618	15	54	9	6	26	28	618	15	36	9	6	17	19
82X-a	Kohl's Free Standing Department Store	1,000 Sq Ft		Avg	*	0.40	1.90														
823	Factory Outlet Center	1,000 Sq Ft		Avg	26.59	0.67	2.29														
841	New Car Sales	1,000 Sq Ft		Avg	33.34	2.05	2.64														
843	Automobile Parts Sales	1,000 Sq Ft		Avg	61.91	2.21	5.98														
848	Tire Store	1,000 Sq Ft		Avg	24.87	2.89	4.15														
849	Tire Superstore	1,000 Sq Ft		Avg	20.36	1.34	2.11														
850	Supermarket	1,000 Sq Ft		Avg	102.24	3.25	10.45														
851	Convenience Market (Open 24 Hours)	1,000 Sq Ft		Avg	737.99	67.03	52.41														
852	Convenience Market (Open 15-16 Hours)	1,000 Sq Ft		Avg	*	31.02	34.57														
853	Convenience Market w/ Gasoline Pumps	Fueling Position(s)		Avg	542.60	17.17	19.22														
854	Discount Supermarket	1,000 Sq Ft		Avg	96.82	2.74	8.90														
860	Wholesale Market	1,000 Sq Ft		Avg	6.73	0.50	0.21														
861	Discount Club	1,000 Sq Ft		Avg	41.80	0.56	4.24														
862	Home Improvement Superstore	1,000 Sq Ft		Avg	29.80	1.20	2.45														
863	Electronics Superstore	1,000 Sq Ft		Avg	45.04	0.28	4.50														
864	Toy/Children's Superstore	1,000 Sq Ft		Avg	*	*	4.99														
865	Baby Superstore	1,000 Sq Ft		Avg	*	*	1.82														
866	Pet Supply Superstore	1,000 Sq Ft		Avg	*	*	4.96														
867	Office Supply Superstore	1,000 Sq Ft		Avg	*	*	3.40														
868	Book Superstore	1,000 Sq Ft		Avg	*	*	19.53														
869	Discount Home Furnishing Superstore	1,000 Sq Ft		Avg	47.81	*	4.01														
870	Apparel Store	1,000 Sq Ft		Avg	66.40	1.00	3.83														
879	Arts and Crafts Store *(1)*	1,000 Sq Ft		Avg	56.55	4.65	6.21														
880	Pharmacy/Drugstore w/o Drive-Through Window	1,000 Sq Ft		Avg	90.06	3.20	8.42														
881	Pharmacy/Drugstore w/ Drive-Through Window	1,000 Sq Ft		Avg	88.16	2.66	8.62														
890	Furniture Store	1,000 Sq Ft		Avg	5.06	0.17	0.46														
896	Video Rental Store	1,000 Sq Ft		Avg	*	*	13.60														
911	Walk-In Bank	1,000 Sq Ft		Avg	156.48	4.07	33.15														
912	Drive-In Bank	1,000 Sq Ft		Avg	246.49	12.34	45.74														

Trip Generation Planner (ITE 7th Edition)

Weekday Trip Generation ***Project Name*** Brentwood Station
Trips Based on Average Rates or Equations ***Project Number*** 097311001.1

Kimley-Horn and Associates, Inc.

ITE Code	Land Use Description	Independent Variable	No. of Units	Avg Rate or Eq	Trip Rates: Daily Rate	AM Rate	PM Rate	Total Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out	New Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out
931	Quality Restaurant	1,000 Sq Ft		Avg	89.95	0.81	7.49														
932	High-Turnover (Sit-Down) Restaurant	1,000 Sq Ft	11.2	Avg	127.15	11.52	10.92	1424	129	122	67	62	74	48	1424	129	70	67	62	42	28
933	Fast-Food Restaurant w/o D.T (General)	1,000 Sq Ft		Avg	716.00	43.67	26.15														
933-1	Fast-Food Restaurant w/o D.T - Yogurt	1,000 Sq Ft		Avg	*	*	15.12														
933-2	Fast-Food Restaurant w/o D.T - Coffee	1,000 Sq Ft		Avg	*	73.03	28.79														
933-3	Fast-Food Restaurant w/o D.T - Donut/Ice Cream	1,000 Sq Ft		Avg	*	*	20.00														
933-4	Fast-Food Restaurant w/o D.T - Donut/Sandwich	1,000 Sq Ft		Avg	*	59.75	13.00														
933-5	Fast-Food Restaurant w/o D.T - Bagel	1,000 Sq Ft		Avg	*	70.22	*														
933-6	Fast-Food Restaurant w/o D.T - Bread	1,000 Sq Ft		Avg	*	4.33	28.00														
934	Fast-Food Restaurant w/ D.T. (General)	1,000 Sq Ft		Avg	496.12	53.11	34.64														
934-1	Fast-Food Restaurant w/ D.T.- Coffee/Bread/Sand	1,000 Sq Ft		Avg	*	183.07	38.90														
935	Fast-Food Restaurant w/ D.T. No Indoor Seats	1,000 Sq Ft		Avg	*	*	153.85														
935-1	Fast-Food Restaurant w/ D.T. Coffee/Espresso	1,000 Sq Ft		Avg	1400.00	260.00	60.00														
							Totals	2140	79	263	33	46	134	129	4182	223	368	109	114	193	175
				48%			Reduction	1027	38	126	16	22	64	62							
							Sub Total 1	1113	41	137	17	24	70	67							
							Totals	618	15	54	9	6	26	28							
				55%			Reduction	340	8	30	5	3	14	15							
							Sub Total 2	278	7	24	4	3	12	13							
							Totals	1424	129	122	67	62	74	48							
				48%			Reduction	684	62	59	32	30	36	23							
							Sub Total 3	740	67	63	35	32	38	25							
							Grand Total	2131	115	225	56	59	120	105							

Notes:
(1) AM and/or PM rates correspond to peak hour of generator

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C Includes weekday rates only
D Total trips include pass-by trips
E Pass-by rates from ITE *Trip Generation Handbook*, 2004
F Worksheet is intended as a planning tool. Verify results w/ ITE *Trip Generation*, 7th Edition
G Enter data only in aqua shaded cells
H Comments on typical building sizes based on internet search results.

Trip Generation Planner (ITE 7th Edition)

Weekday Trip Generation ***Project Name*** Brighton Station
Trips Based on Average Rates or Equations ***Project Number*** 097311001.1

Kimley-Horn and Associates, Inc.

ITE Code	Land Use Description	Independent Variable	No. of Units	Avg Rate or Eq	Trip Rates: Daily Rate	AM Rate	PM Rate	Total Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out	New Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out
210	Single-Family Detached Housing	Dwelling Unit(s)	169	Avg	9.57	0.75	1.01	1617	127	171	32	95	108	63	1617	127	171	32	95	108	63
220	Apartment	Dwelling Unit(s)		Avg	6.72	0.51	0.62														
221	Low-Rise Apartment	Occ. Dwelling Unit(s)		Avg	6.59	0.46	0.58														
222	High-Rise Apartment	Dwelling Unit(s)		Avg	4.20	0.30	0.35														
223	Mid-Rise Apartment	Dwelling Unit(s)		Avg	*	0.30	0.39														
224	Rental Townhouse	Dwelling Unit(s)		Avg	*	0.70	0.72														
230	Residential Condominium/Townhouse	Dwelling Unit(s)		Avg	5.86	0.44	0.52														
231	Low-Rise Residential Condominium/Townhouse	Dwelling Unit(s)		Avg	*	0.67	0.78														
232	High-Rise Residential Condominium/Townhouse	Dwelling Unit(s)		Avg	4.18	0.34	0.38														
233	Luxury Condominium/Townhouse	Occ. Dwelling Unit(s)		Avg	*	0.56	0.55														
240	Mobile Home Park	Occ. Dwelling Unit(s)		Avg	4.99	0.44	0.59														
251	Senior Adult Housing-Detached	Dwelling Unit(s)		Avg	3.71	0.20	0.26														
251X-a	Senior Adult Housing (CA Pulte Dell Webb)	Dwelling Unit(s)		Avg	3.96	0.17	0.23														
252	Senior Adult Housing-Attached	Occ. Dwelling Unit(s)		Avg	3.48	0.08	0.11														
253	Congregate Care Facility	Dwelling Unit(s)		Avg	2.02	0.06	0.17														
254	Assisted Living	Bed(s)		Avg	2.66	0.14	0.22														
255	Continuing Care Retirement Community	Occupied Unit(s)		Avg	2.81	0.18	0.29														
260	Recreational Homes	Dwelling Unit(s)		Avg	3.16	0.16	0.26														
270	Residential Planned Unit Development	Dwelling Unit(s)		Avg	7.50	0.51	0.62														
							Totals	1617	127	171	32	95	108	63	1617	127	171	32	95	108	63
				14%			Reduction	226	18	24	4	13	15	9							
							Grand Total	1391	109	147	28	82	93	54							

Notes:
(1) AM and/or PM rates correspond to peak hour of generator

A Trip generation data from ITE *Trip Generation*, 7th Edition
B AM/PM rates correspond to peak of adjacent street traffic (if data available)
C Includes weekday rates only
D Total trips include pass-by trips
E Pass-by rates from ITE *Trip Generation Handbook*, 2004
F Worksheet is intended as a planning tool. Verify results w/ ITE *Trip Generation*, 7th Edition
G Enter data only in aqua shaded cells
H Comments on typical building sizes based on internet search results.

Trip Generation Planner (ITE 7th Edition)

Weekday Trip Generation ***Project Name*** Streets of Brentwood
Trips Based on Average Rates or Equations ***Project Number*** 097311001.1

Kimley-Horn and Associates, Inc.

ITE Code	Land Use Description	Independent Variable	No. of Units	Avg Rate or Eq	Trip Rates: Daily Rate	AM Rate	PM Rate	Total Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out	New Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out
812	Building Materials and Lumber Store	1,000 Sq Ft		Avg	45.16	2.60	4.49														
813	Free Standing Discount Superstore	1,000 Sq Ft		Avg	49.21	1.84	3.87														
813X-a	Free Standing Discount Superstore (200+ KSF)	1,000 Sq Ft		Avg			5.50														
814	Specialty Retail Center	1,000 Sq Ft		Avg	44.32	*	2.71														
815	Free Standing Discount Store	1,000 Sq Ft		Avg	56.02	0.84	5.06														
816	Hardware/Paint Store	1,000 Sq Ft		Avg	51.29	1.08	4.84														
817	Nursery/Garden Center	1,000 Sq Ft		Avg	36.08	1.31	3.80														
818	Nursery (Wholesale)	1,000 Sq Ft		Avg	39.00	2.40	5.17														
820	Shopping Center	1,000 Sq Ft	446.1	Avg	42.94	1.03	3.75	19156	459	1673	280	179	803	870	19156	459	1250	280	179	600	650
82X-a	Kohl's Free Standing Department Store	1,000 Sq Ft		Avg	*	0.40	1.90														
823	Factory Outlet Center	1,000 Sq Ft		Avg	26.59	0.67	2.29														
841	New Car Sales	1,000 Sq Ft		Avg	33.34	2.05	2.64														
843	Automobile Parts Sales	1,000 Sq Ft		Avg	61.91	2.21	5.98														
848	Tire Store	1,000 Sq Ft		Avg	24.87	2.89	4.15														
849	Tire Superstore	1,000 Sq Ft		Avg	20.36	1.34	2.11														
850	Supermarket	1,000 Sq Ft		Avg	102.24	3.25	10.45														
851	Convenience Market (Open 24 Hours)	1,000 Sq Ft		Avg	737.99	67.03	52.41														
852	Convenience Market (Open 15-16 Hours)	1,000 Sq Ft		Avg	*	31.02	34.57														
853	Convenience Market w/ Gasoline Pumps	Fueling Position(s)		Avg	542.60	17.17	19.22														
854	Discount Supermarket	1,000 Sq Ft		Avg	96.82	2.74	8.90														
860	Wholesale Market	1,000 Sq Ft		Avg	6.73	0.50	0.21														
861	Discount Club	1,000 Sq Ft		Avg	41.80	0.56	4.24														
862	Home Improvement Superstore	1,000 Sq Ft		Avg	29.80	1.20	2.45														
863	Electronics Superstore	1,000 Sq Ft		Avg	45.04	0.28	4.50														
864	Toy/Children's Superstore	1,000 Sq Ft		Avg	*	*	4.99														
865	Baby Superstore	1,000 Sq Ft		Avg	*	*	1.82														
866	Pet Supply Superstore	1,000 Sq Ft		Avg	*	*	4.98														
867	Office Supply Superstore	1,000 Sq Ft		Avg	*	*	3.40														
868	Book Superstore	1,000 Sq Ft		Avg	*	*	19.53														
869	Discount Home Furnishing Superstore	1,000 Sq Ft		Avg	47.81	*	4.01														
870	Apparel Store	1,000 Sq Ft		Avg	66.40	1.00	3.83														
879	Arts and Crafts Store *(1)*	1,000 Sq Ft		Avg	56.55	4.65	6.21														
880	Pharmacy/Drugstore w/o Drive-Through Window	1,000 Sq Ft		Avg	90.06	3.20	8.42														
881	Pharmacy/Drugstore w/ Drive-Through Window	1,000 Sq Ft		Avg	88.16	2.66	8.62														
890	Furniture Store	1,000 Sq Ft		Avg	5.06	0.17	0.48														
896	Video Rental Store	1,000 Sq Ft		Avg	*	*	13.60														
							Totals	19156	459	1673	280	179	803	870	19156	459	1250	280	179	600	650
				46%			Reduction	8812	211	770	129	82	369	400							
							Grand Total	10344	248	903	151	97	434	470							

Notes:
(1) AM and/or PM rates correspond to peak hour of generator

A Trip generation data from ITE *Trip Generation*, 7th Edition
B AM/PM rates correspond to peak of adjacent street traffic (if data available)
C Includes weekday rates only
D Total trips include pass-by trips
E Pass-by rates from ITE *Trip Generation Handbook*, 2004
F Worksheet is intended as a planning tool. Verify results w/ ITE *Trip Generation*, 7th Edition
G Enter data only in aqua shaded cells
H Comments on typical building sizes based on internet search results.

Trip Generation Planner (ITE 7th Edition)

Weekday Trip Generation ***Project Name*** Mancini's Sleep World
Trips Based on Average Rates or Equations ***Project Number*** 097311001.1

Kimley-Horn and Associates, Inc.

ITE Code	Land Use Description	Independent Variable	No. of Units	Avg Rate or Eq	Trip Rates: Daily Rate	AM Rate	PM Rate	Total Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out	New Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out
812	Building Materials and Lumber Store	1,000 Sq Ft		Avg	45.16	2.60	4.49														
813	Free Standing Discount Superstore	1,000 Sq Ft		Avg	49.21	1.84	3.87														
813X-a	Free Standing Discount Superstore (200+ KSF)	1,000 Sq Ft		Avg			5.50														
814	Specialty Retail Center	1,000 Sq Ft		Avg	44.32	*	2.71														
815	Free Standing Discount Store	1,000 Sq Ft		Avg	56.02	0.84	5.06														
816	Hardware/Paint Store	1,000 Sq Ft		Avg	51.29	1.08	4.84														
817	Nursery/Garden Center	1,000 Sq Ft		Avg	36.08	1.31	3.80														
818	Nursery (Wholesale)	1,000 Sq Ft		Avg	39.00	2.40	5.17														
820	Shopping Center	1,000 Sq Ft		Avg	42.94	1.03	3.75														
82X-a	Kohl's Free Standing Department Store	1,000 Sq Ft		Avg	*	0.40	1.90														
823	Factory Outlet Center	1,000 Sq Ft		Avg	26.59	0.67	2.29														
841	New Car Sales	1,000 Sq Ft		Avg	33.34	2.05	2.64														
843	Automobile Parts Sales	1,000 Sq Ft		Avg	61.91	2.21	5.98														
848	Tire Store	1,000 Sq Ft		Avg	24.87	2.89	4.15														
849	Tire Superstore	1,000 Sq Ft		Avg	20.36	1.34	2.11														
850	Supermarket	1,000 Sq Ft		Avg	102.24	3.25	10.45														
851	Convenience Market (Open 24 Hours)	1,000 Sq Ft		Avg	737.99	67.03	52.41														
852	Convenience Market (Open 15-16 Hours)	1,000 Sq Ft		Avg	*	31.02	34.57														
853	Convenience Market w/ Gasoline Pumps	Fueling Position(s)		Avg	542.60	17.17	19.22														
854	Discount Supermarket	1,000 Sq Ft		Avg	96.82	2.74	8.90														
860	Wholesale Market	1,000 Sq Ft		Avg	6.73	0.50	0.21														
861	Discount Club	1,000 Sq Ft		Avg	41.80	0.56	4.24														
862	Home Improvement Superstore	1,000 Sq Ft		Avg	29.80	1.20	2.45														
863	Electronics Superstore	1,000 Sq Ft		Avg	45.04	0.28	4.50														
864	Toy/Children's Superstore	1,000 Sq Ft		Avg	*	*	4.99														
865	Baby Superstore	1,000 Sq Ft		Avg	*	*	1.82														
866	Pet Supply Superstore	1,000 Sq Ft		Avg	*	*	4.98														
867	Office Supply Superstore	1,000 Sq Ft		Avg	*	*	3.40														
868	Book Superstore	1,000 Sq Ft		Avg	*	*	19.53														
869	Discount Home Furnishing Superstore	1,000 Sq Ft		Avg	47.81	*	4.01														
870	Apparel Store	1,000 Sq Ft		Avg	66.40	1.00	3.83														
879	Arts and Crafts Store *(1)*	1,000 Sq Ft		Avg	56.55	4.65	6.21														
880	Pharmacy/Drugstore w/o Drive-Through Window	1,000 Sq Ft		Avg	90.06	3.20	8.42														
881	Pharmacy/Drugstore w/ Drive-Through Window	1,000 Sq Ft		Avg	88.16	2.66	8.62														
890	Furniture Store	1,000 Sq Ft	14.816	Avg	5.06	0.17	0.48	74	2	7	1	1	3	4	74	2	3	1	1	1	2
896	Video Rental Store	1,000 Sq Ft		Avg	*	*	13.60														
							Totals	74	2	7	1	1	3	4	74	2	3	1	1	1	2
				55%			Reduction	41	1	4	1	1	2	2							
							Grand Total	33	1	3	0	0	1	2							

Notes:
(1) AM and/or PM rates correspond to peak hour of generator

A Trip generation data from ITE *Trip Generation*, 7th Edition
B AM/PM rates correspond to peak of adjacent street traffic (if data available)
C Includes weekday rates only
D Total trips include pass-by trips
E Pass-by rates from ITE *Trip Generation Handbook*, 2004
F Worksheet is intended as a planning tool. Verify results w/ ITE *Trip Generation*, 7th Edition
G Enter data only in aqua shaded cells
H Comments on typical building sizes based on internet search results.

Trip Generation Planner (ITE 7th Edition)

Weekday Trip Generation ***Project Name*** Empire Crossings
Trips Based on Average Rates or Equations ***Project Number*** 097311001.1

Kimley-Horn and Associates, Inc.

ITE Code	Land Use Description	Independent Variable	No. of Units	Avg Rate or Eq	Trip Rates: Daily Rate	AM Rate	PM Rate	Total Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out	New Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out
812	Building Materials and Lumber Store	1,000 Sq Ft		Avg	45.16	2.60	4.49														
813	Free Standing Discount Superstore	1,000 Sq Ft		Avg	49.21	1.84	3.87														
813X-a	Free Standing Discount Superstore (200+ KSF)	1,000 Sq Ft		Avg			5.50														
814	Specialty Retail Center	1,000 Sq Ft		Avg	44.32	*	2.71														
815	Free Standing Discount Store	1,000 Sq Ft		Avg	56.02	0.84	5.06														
816	Hardware/Paint Store	1,000 Sq Ft		Avg	51.29	1.08	4.84														
817	Nursery/Garden Center	1,000 Sq Ft		Avg	36.08	1.31	3.80														
818	Nursery (Wholesale)	1,000 Sq Ft		Avg	39.00	2.40	5.17														
820	Shopping Center	1,000 Sq Ft	23.6	Avg	42.94	1.03	3.75	1013	24	89	15	9	43	46	1013	24	59	15	9	28	31
82X-a	Kohl's Free Standing Department Store	1,000 Sq Ft		Avg	*	0.40	1.90														
823	Factory Outlet Center	1,000 Sq Ft		Avg	26.59	0.67	2.29														
841	New Car Sales	1,000 Sq Ft		Avg	33.34	2.05	2.64														
843	Automobile Parts Sales	1,000 Sq Ft		Avg	61.91	2.21	5.98														
848	Tire Store	1,000 Sq Ft		Avg	24.87	2.69	4.15														
849	Tire Superstore	1,000 Sq Ft		Avg	20.36	1.34	2.11														
850	Supermarket	1,000 Sq Ft		Avg	102.24	3.25	10.45														
851	Convenience Market (Open 24 Hours)	1,000 Sq Ft		Avg	737.99	67.03	52.41														
852	Convenience Market (Open 15-16 Hours)	1,000 Sq Ft		Avg	*	31.02	34.57														
853	Convenience Market w/ Gasoline Pumps	Fueling Position(s)		Avg	542.60	17.17	19.22														
854	Discount Supermarket	1,000 Sq Ft		Avg	96.82	2.74	8.90														
860	Wholesale Market	1,000 Sq Ft		Avg	6.73	0.50	0.21														
861	Discount Club	1,000 Sq Ft		Avg	41.80	0.56	4.24														
862	Home Improvement Superstore	1,000 Sq Ft		Avg	29.80	1.20	2.45														
863	Electronics Superstore	1,000 Sq Ft		Avg	45.04	0.28	4.50														
864	Toy/Children's Superstore	1,000 Sq Ft		Avg	*	*	4.99														
865	Baby Superstore	1,000 Sq Ft		Avg	*	*	1.82														
866	Pet Supply Superstore	1,000 Sq Ft		Avg	*	*	4.96														
867	Office Supply Superstore	1,000 Sq Ft		Avg	*	*	3.40														
868	Book Superstore	1,000 Sq Ft		Avg	*	*	19.53														
869	Discount Home Furnishing Superstore	1,000 Sq Ft		Avg	47.81	*	4.01														
870	Apparel Store	1,000 Sq Ft		Avg	66.40	1.00	3.83														
879	Arts and Crafts Store *(1)*	1,000 Sq Ft		Avg	56.55	4.65	6.21														
880	Pharmacy/Drugstore w/o Drive-Through Window	1,000 Sq Ft		Avg	90.06	3.20	8.42														
881	Pharmacy/Drugstore w/ Drive-Through Window	1,000 Sq Ft		Avg	88.16	2.66	8.62														
890	Furniture Store	1,000 Sq Ft		Avg	5.06	0.17	0.46														
896	Video Rental Store	1,000 Sq Ft		Avg	*	*	13.60														
							Totals	1013	24	89	15	9	43	46	1013	24	59	15	9	28	31
					53%		Reduction	537	13	47	8	5	23	24							
							Grand Total	476	11	42	7	4	20	22							

Notes:
(1) AM and/or PM rates correspond to peak hour of generator

A Trip generation data from ITE *Trip Generation*, 7th Edition
B AM/PM rates correspond to peak of adjacent street traffic (if data available)
C Includes weekday rates only
D Total trips include pass-by trips
E Pass-by rates from ITE *Trip Generation Handbook*, 2004
F Worksheet is intended as a planning tool. Verify results w/ ITE *Trip Generation*, 7th Edition
G Enter data only in aqua shaded cells
H Comments on typical building sizes based on internet search results.

Trip Generation Planner (ITE 7th Edition)

Weekday Trip Generation ***Project Name*** Best Buy
Trips Based on Average Rates or Equations ***Project Number*** 097311001.1

Kimley-Horn and Associates, Inc.

ITE Code	Land Use Description	Independent Variable	No. of Units	Avg Rate or Eq	Trip Rates: Daily Rate	AM Rate	PM Rate	Total Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out	New Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out
812	Building Materials and Lumber Store	1,000 Sq Ft		Avg	45.16	2.60	4.49														
813	Free Standing Discount Superstore	1,000 Sq Ft		Avg	49.21	1.84	3.87														
813X-a	Free Standing Discount Superstore (200+ KSF)	1,000 Sq Ft		Avg			5.50														
814	Specialty Retail Center	1,000 Sq Ft		Avg	44.32	*	2.71														
815	Free Standing Discount Store	1,000 Sq Ft		Avg	56.02	0.84	5.06														
816	Hardware/Paint Store	1,000 Sq Ft		Avg	51.29	1.08	4.84														
817	Nursery/Garden Center	1,000 Sq Ft		Avg	36.08	1.31	3.80														
818	Nursery (Wholesale)	1,000 Sq Ft		Avg	39.00	2.40	5.17														
820	Shopping Center	1,000 Sq Ft		Avg	42.94	1.03	3.75														
82X-a	Kohl's Free Standing Department Store	1,000 Sq Ft		Avg	*	0.40	1.90														
823	Factory Outlet Center	1,000 Sq Ft		Avg	26.59	0.67	2.29														
841	New Car Sales	1,000 Sq Ft		Avg	33.34	2.05	2.64														
843	Automobile Parts Sales	1,000 Sq Ft		Avg	61.91	2.21	5.98														
848	Tire Store	1,000 Sq Ft		Avg	24.87	2.69	4.15														
849	Tire Superstore	1,000 Sq Ft		Avg	20.36	1.34	2.11														
850	Supermarket	1,000 Sq Ft		Avg	102.24	3.25	10.45														
851	Convenience Market (Open 24 Hours)	1,000 Sq Ft		Avg	737.99	67.03	52.41														
852	Convenience Market (Open 15-16 Hours)	1,000 Sq Ft		Avg	*	31.02	34.57														
853	Convenience Market w/ Gasoline Pumps	Fueling Position(s)		Avg	542.60	17.17	19.22														
854	Discount Supermarket	1,000 Sq Ft		Avg	96.82	2.74	8.90														
860	Wholesale Market	1,000 Sq Ft		Avg	6.73	0.50	0.21														
861	Discount Club	1,000 Sq Ft		Avg	41.80	0.56	4.24														
862	Home Improvement Superstore	1,000 Sq Ft		Avg	29.80	1.20	2.45														
863	Electronics Superstore	1,000 Sq Ft	60.1	Avg	45.04	0.28	4.50	2707	17	270		17	132	138	2707	17	162		17	79	83
864	Toy/Children's Superstore	1,000 Sq Ft		Avg	*	*	4.99														
865	Baby Superstore	1,000 Sq Ft		Avg	*	*	1.82														
866	Pet Supply Superstore	1,000 Sq Ft		Avg	*	*	4.96														
867	Office Supply Superstore	1,000 Sq Ft		Avg	*	*	3.40														
868	Book Superstore	1,000 Sq Ft		Avg	*	*	19.53														
869	Discount Home Furnishing Superstore	1,000 Sq Ft		Avg	47.81	*	4.01														
870	Apparel Store	1,000 Sq Ft		Avg	66.40	1.00	3.83														
879	Arts and Crafts Store *(1)*	1,000 Sq Ft		Avg	56.55	4.65	6.21														
880	Pharmacy/Drugstore w/o Drive-Through Window	1,000 Sq Ft		Avg	90.06	3.20	8.42														
881	Pharmacy/Drugstore w/ Drive-Through Window	1,000 Sq Ft		Avg	88.16	2.66	8.62														
890	Furniture Store	1,000 Sq Ft		Avg	5.06	0.17	0.46														
896	Video Rental Store	1,000 Sq Ft		Avg	*	*	13.60														
							Totals	2707	17	270		17	132	138	2707	17	162		17	79	83
					55%		Reduction	1489	9	149		9	73	76							
							Grand Total	1218	8	122		8	59	62							

Notes:
(1) AM and/or PM rates correspond to peak hour of generator

A Trip generation data from ITE *Trip Generation*, 7th Edition
B AM/PM rates correspond to peak of adjacent street traffic (if data available)
C Includes weekday rates only
D Total trips include pass-by trips
E Pass-by rates from ITE *Trip Generation Handbook*, 2004
F Worksheet is intended as a planning tool. Verify results w/ ITE *Trip Generation*, 7th Edition
G Enter data only in aqua shaded cells
H Comments on typical building sizes based on internet search results.

Trip Generation Planner (ITE 7th Edition)

Weekday Trip Generation ***Project Name*** Alexandra Homes
Trips Based on Average Rates or Equations ***Project Number*** 097311001.1

Kimley-Horn and Associates, Inc.

ITE Code	Land Use Description	Independent Variable	No. of Units	Avg Rate or Eq	Trip Rates: Daily Rate	AM Rate	PM Rate	Total Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out	New Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out
210	Single-Family Detached Housing	Dwelling Unit(s)	37	Avg	9.57	0.75	1.01	354	28	37	7	21	23	14	354	28	37	7	21	23	14
220	Apartment	Dwelling Unit(s)		Avg	6.72	0.51	0.62														
221	Low-Rise Apartment	Occ. Dwelling Unit(s)		Avg	6.59	0.46	0.58														
222	High-Rise Apartment	Dwelling Unit(s)		Avg	4.20	0.30	0.35														
223	Mid-Rise Apartment	Dwelling Unit(s)		Avg	*	0.30	0.39														
224	Rental Townhouse	Dwelling Unit(s)		Avg	*	0.70	0.72														
230	Residential Condominium/Townhouse	Dwelling Unit(s)		Avg	5.86	0.44	0.52														
231	Low-Rise Residential Condominium/Townhouse	Dwelling Unit(s)		Avg	*	0.67	0.78														
232	High-Rise Residential Condominium/Townhouse	Dwelling Unit(s)		Avg	4.18	0.34	0.38														
233	Luxury Condominium/Townhouse	Occ. Dwelling Unit(s)		Avg	*	0.56	0.55														
240	Mobile Home Park	Occ. Dwelling Unit(s)		Avg	4.99	0.44	0.59														
251	Senior Adult Housing-Detached	Dwelling Unit(s)		Avg	3.71	0.20	0.26														
251X-a	Senior Adult Housing (CA Pulte Dell Webb)	Dwelling Unit(s)		Avg	3.96	0.17	0.23														
252	Senior Adult Housing-Attached	Occ. Dwelling Unit(s)		Avg	3.48	0.08	0.11														
253	Congregate Care Facility	Dwelling Unit(s)		Avg	2.02	0.06	0.17														
254	Assisted Living	Bed(s)		Avg	2.66	0.14	0.22														
255	Continuing Care Retirement Community	Occupied Unit(s)		Avg	2.81	0.18	0.29														
260	Recreational Homes	Dwelling Unit(s)		Avg	3.16	0.16	0.26														
270	Residential Planned Unit Development	Dwelling Unit(s)		Avg	7.50	0.51	0.62														
							Totals	354	28	37	7	21	23	14	354	28	37	7	21	23	14
					14%		Reduction	50	4	5	1	3	3	2							
							Grand Total	304	24	32	6	18	20	12							

Notes:
(1) AM and/or PM rates correspond to peak hour of generator

A Trip generation data from ITE *Trip Generation*, 7th Edition
B AM/PM rates correspond to peak of adjacent street traffic (if data available)
C Includes weekday rates only
D Total trips include pass-by trips
E Pass-by rates from ITE *Trip Generation Handbook*, 2004
F Worksheet is intended as a planning tool. Verify results w/ ITE *Trip Generation*, 7th Edition
G Enter data only in aqua shaded cells
H Comments on typical building sizes based on internet search results.

Trip Generation Planner (ITE 7th Edition)

Weekday Trip Generation ***Project Name*** LT Towne Plaza
Trips Based on Average Rates or Equations ***Project Number*** 097311001.1

Kimley-Horn and Associates, Inc.

ITE Code	Land Use Description	Independent Variable	No. of Units	Avg Rate or Eq	Trip Rates: Daily Rate	AM Rate	PM Rate	Total Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out	New Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out
812	Building Materials and Lumber Store	1,000 Sq Ft		Avg	45.16	2.60	4.49														
813	Free Standing Discount Superstore	1,000 Sq Ft		Avg	49.21	1.84	3.87														
813X-a	Free Standing Discount Superstore (200+ KSF)	1,000 Sq Ft		Avg			5.50														
814	Specialty Retail Center	1,000 Sq Ft		Avg	44.32	*	2.71														
815	Free Standing Discount Store	1,000 Sq Ft		Avg	56.02	0.84	5.06														
816	Hardware/Paint Store	1,000 Sq Ft		Avg	51.29	1.08	4.84														
817	Nursery/Garden Center	1,000 Sq Ft		Avg	36.08	1.31	3.80														
818	Nursery (Wholesale)	1,000 Sq Ft		Avg	39.00	2.40	5.17														
820	Shopping Center	1,000 Sq Ft	116.23	Avg	42.94	1.03	3.75	5077	122	443	74	48	213	230	5077	122	292	74	48	140	152
82X-a	Kohl's Free Standing Department Store	1,000 Sq Ft		Avg	*	0.40	1.90														
823	Factory Outlet Center	1,000 Sq Ft		Avg	26.59	0.87	2.29														
841	New Car Sales	1,000 Sq Ft		Avg	33.34	2.05	2.64														
843	Automobile Parts Sales	1,000 Sq Ft		Avg	61.91	2.21	5.98														
848	Tire Store	1,000 Sq Ft		Avg	24.87	2.89	4.15														
849	Tire Superstore	1,000 Sq Ft		Avg	20.36	1.34	2.11														
850	Supermarket	1,000 Sq Ft		Avg	102.24	3.25	10.45														
851	Convenience Market (Open 24 Hours)	1,000 Sq Ft		Avg	737.99	67.03	52.41														
852	Convenience Market (Open 15-16 Hours)	1,000 Sq Ft		Avg	*	31.02	34.57														
853	Convenience Market w/ Gasoline Pumps	Fueling Position(s)		Avg	542.60	17.17	19.22														
854	Discount Supermarket	1,000 Sq Ft		Avg	96.82	2.74	8.90														
860	Wholesale Market	1,000 Sq Ft		Avg	6.73	0.50	0.21														
861	Discount Club	1,000 Sq Ft		Avg	41.80	0.56	4.24														
862	Home Improvement Superstore	1,000 Sq Ft		Avg	29.80	1.20	2.45														
863	Electronics Superstore	1,000 Sq Ft		Avg	45.04	0.28	4.50														
864	Toy/Children's Superstore	1,000 Sq Ft		Avg	*	*	4.99														
865	Baby Superstore	1,000 Sq Ft		Avg	*	*	1.82														
866	Pet Supply Superstore	1,000 Sq Ft		Avg	*	*	4.98														
867	Office Supply Superstore	1,000 Sq Ft		Avg	*	*	3.40														
868	Book Superstore	1,000 Sq Ft		Avg	*	*	19.53														
869	Discount Home Furnishing Superstore	1,000 Sq Ft		Avg	47.61	*	4.01														
870	Apparel Store	1,000 Sq Ft		Avg	66.40	1.00	3.83														
879	Arts and Crafts Store *(1)*	1,000 Sq Ft		Avg	58.55	4.65	6.21														
880	Pharmacy/Drugstore w/o Drive-Through Window	1,000 Sq Ft		Avg	90.06	3.20	8.42														
881	Pharmacy/Drugstore w/ Drive-Through Window	1,000 Sq Ft		Avg	88.16	2.66	8.62														
890	Furniture Store	1,000 Sq Ft		Avg	5.06	0.17	0.46														
896	Video Rental Store	1,000 Sq Ft		Avg	*	*	13.60														
							Totals	5077	122	443	74	48	213	230	5077	122	292	74	48	140	152
					53%		Reduction	2691	65	235	39	25	113	122							
							Grand Total	2386	57	208	35	23	100	108							

Notes:
(1) AM and/or PM rates correspond to peak hour of generator

A Trip generation data from ITE *Trip Generation*, 7th Edition
B AM/PM rates correspond to peak of adjacent street traffic (if data available)
C Includes weekday rates only
D Total trips include pass-by trips
E Pass-by rates from ITE *Trip Generation Handbook*, 2004
F Worksheet is intended as a planning tool. Verify results w/ ITE *Trip Generation*, 7th Edition
G Enter data only in aqua shaded cells
H Comments on typical building sizes based on internet search results.

Trip Generation Planner (ITE 7th Edition)

Weekday Trip Generation ***Project Name*** Carmel Estates
Trips Based on Average Rates or Equations ***Project Number*** 097311001.1

Kimley-Horn and Associates, Inc.

ITE Code	Land Use Description	Independent Variable	No. of Units	Avg Rate or Eq	Trip Rates: Daily Rate	AM Rate	PM Rate	Total Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out	New Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out
210	Single-Family Detached Housing	Dwelling Unit(s)	106	Avg	9.57	0.75	1.01	1014	80	107	20	60	67	40	1014	80	107	20	60	67	40
220	Apartment	Dwelling Unit(s)		Avg	6.72	0.51	0.62														
221	Low-Rise Apartment	Occ. Dwelling Unit(s)		Avg	6.59	0.46	0.58														
222	High-Rise Apartment	Dwelling Unit(s)		Avg	4.20	0.30	0.35														
223	Mid-Rise Apartment	Dwelling Unit(s)		Avg	*	0.30	0.39														
224	Rental Townhouse	Dwelling Unit(s)		Avg	*	0.70	0.72														
230	Residential Condominium/Townhouse	Dwelling Unit(s)		Avg	5.86	0.44	0.52														
231	Low-Rise Residential Condominium/Townhouse	Dwelling Unit(s)		Avg	*	0.67	0.78														
232	High-Rise Residential Condominium/Townhouse	Dwelling Unit(s)		Avg	4.18	0.34	0.38														
233	Luxury Condominium/Townhouse	Occ. Dwelling Unit(s)		Avg	*	0.56	0.55														
240	Mobile Home Park	Occ. Dwelling Unit(s)		Avg	4.99	0.44	0.59														
251	Senior Adult Housing-Detached	Dwelling Unit(s)		Avg	3.71	0.20	0.26														
251X-a	Senior Adult Housing (CA Pulte Dell Webb)	Dwelling Unit(s)		Avg	3.96	0.17	0.23														
252	Senior Adult Housing-Attached	Occ. Dwelling Unit(s)		Avg	3.48	0.08	0.11														
253	Congregate Care Facility	Dwelling Unit(s)		Avg	2.02	0.06	0.17														
254	Assisted Living	Bed(s)		Avg	2.66	0.14	0.22														
255	Continuing Care Retirement Community	Occupied Unit(s)		Avg	2.81	0.18	0.29														
260	Recreational Homes	Dwelling Unit(s)		Avg	3.16	0.16	0.26														
270	Residential Planned Unit Development	Dwelling Unit(s)		Avg	7.50	0.51	0.62														
							Totals	1014	80	107	20	60	67	40	1014	80	107	20	60	67	40
					14%		Reduction	142	11	15	3	8	9	6							
							Grand Total	872	69	92	17	52	58	34							

Notes:
(1) AM and/or PM rates correspond to peak hour of generator

A Trip generation data from ITE *Trip Generation*, 7th Edition
B AM/PM rates correspond to peak of adjacent street traffic (if data available)
C Includes weekday rates only
D Total trips include pass-by trips
E Pass-by rates from ITE *Trip Generation Handbook*, 2004
F Worksheet is intended as a planning tool. Verify results w/ ITE *Trip Generation*, 7th Edition
G Enter data only in aqua shaded cells
H Comments on typical building sizes based on internet search results.

Trip Generation Planner (ITE 7th Edition)

Weekday Trip Generation ***Project Name*** Terreno Homes
Trips Based on Average Rates or Equations ***Project Number*** 097311001.1

Kimley-Horn and Associates, Inc.

ITE Code	Land Use Description	Independent Variable	No. of Units	Avg Rate or Eq	Trip Rates: Daily Rate	AM Rate	PM Rate	Total Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out	New Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out
210	Single-Family Detached Housing	Dwelling Unit(s)	244	Avg	9.57	0.75	1.01	2335	183	246	46	137	155	91	2335	183	246	46	137	155	91
220	Apartment	Dwelling Unit(s)		Avg	6.72	0.51	0.62														
221	Low-Rise Apartment	Occ. Dwelling Unit(s)		Avg	6.59	0.46	0.58														
222	High-Rise Apartment	Dwelling Unit(s)		Avg	4.20	0.30	0.35														
223	Mid-Rise Apartment	Dwelling Unit(s)		Avg	*	0.30	0.39														
224	Rental Townhouse	Dwelling Unit(s)		Avg	*	0.70	0.72														
230	Residential Condominium/Townhouse	Dwelling Unit(s)		Avg	5.86	0.44	0.52														
231	Low-Rise Residential Condominium/Townhouse	Dwelling Unit(s)		Avg	*	0.67	0.78														
232	High-Rise Residential Condominium/Townhouse	Dwelling Unit(s)		Avg	4.18	0.34	0.38														
233	Luxury Condominium/Townhouse	Occ. Dwelling Unit(s)		Avg	*	0.56	0.55														
240	Mobile Home Park	Occ. Dwelling Unit(s)		Avg	4.99	0.44	0.59														
251	Senior Adult Housing-Detached	Dwelling Unit(s)		Avg	3.71	0.20	0.26														
251X-a	Senior Adult Housing (CA Pulte Dell Webb)	Dwelling Unit(s)		Avg	3.96	0.17	0.23														
252	Senior Adult Housing-Attached	Occ. Dwelling Unit(s)		Avg	3.48	0.08	0.11														
253	Congregate Care Facility	Dwelling Unit(s)		Avg	2.02	0.06	0.17														
254	Assisted Living	Bed(s)		Avg	2.66	0.14	0.22														
255	Continuing Care Retirement Community	Occupied Unit(s)		Avg	2.81	0.18	0.29														
260	Recreational Homes	Dwelling Unit(s)		Avg	3.16	0.16	0.26														
270	Residential Planned Unit Development	Dwelling Unit(s)		Avg	7.50	0.51	0.62														
							Totals	2335	183	246	46	137	155	91	2335	183	246	46	137	155	91
					14%		Reduction	327	26	34	6	19	22	13							
							Grand Total	2008	157	212	40	118	133	78							

Notes:
(1) AM and/or PM rates correspond to peak hour of generator

A Trip generation data from ITE *Trip Generation*, 7th Edition
B AM/PM rates correspond to peak of adjacent street traffic (if data available)
C Includes weekday rates only
D Total trips include pass-by trips
E Pass-by rates from ITE *Trip Generation Handbook*, 2004
F Worksheet is intended as a planning tool. Verify results w/ ITE *Trip Generation*, 7th Edition
G Enter data only in aqua shaded cells
H Comments on typical building sizes based on internet search results.

Trip Generation Planner (ITE 7th Edition)

Weekday Trip Generation ***Project Name*** Oncology Center
Trips Based on Average Rates or Equations ***Project Number*** 097311001.1

Kimley-Horn and Associates, Inc.

ITE Code	Land Use Description	Independent Variable	No. of Units	Avg Rate or Eq	Trip Rates: Daily Rate	AM Rate	PM Rate	Total Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out	New Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out
610	Hospital	1,000 Sq Ft		Avg	17.57	1.20	1.18														
620	Nursing Home	Bed(s)		Avg	2.37	0.17	0.22														
630	Clinic	1,000 Sq Ft		Avg	31.45	*	5.18														
710	General Office Building *(1)*	1,000 Sq Ft		Avg	11.01	1.55	1.49														
714	Corporate Headquarters *(1)*	1,000 Sq Ft		Avg	7.98	1.49	1.40														
715	Single Tenant Office Building *(1)*	1,000 Sq Ft		Avg	11.57	1.80	1.73														
720	Medical-Dental Office Building	1,000 Sq Ft	40	Avg	36.13	2.48	3.72	1445	99	149	78	21	40	109	1445	99	149	78	21	40	109
730	Government Office Building *(1)*	1,000 Sq Ft		Avg	68.93	5.88	11.03														
731	State Motor Vehicles Department	1,000 Sq Ft		Avg	166.02	9.84	17.09														
732	US Post Office	1,000 Sq Ft		Avg	108.19	8.02	10.89														
733	Government Office Complex	1,000 Sq Ft		Avg	27.92	2.21	2.85														
750	Office Park *(1)*	1,000 Sq Ft		Avg	11.42	1.74	1.50														
760	Research and Development Center *(1)*	1,000 Sq Ft		Avg	8.11	1.24	1.08														
770	Business Park *(1)*	1,000 Sq Ft		Avg	12.76	1.43	1.29														
							Totals	1445	99	149	78	21	40	109	1445	99	149	78	21	40	109
					40%		Reduction	578	40	60	31	8	16	44							
							Grand Total	867	59	89	47	13	24	65							

Notes:
(1) AM and/or PM rates correspond to peak hour of generator

A Trip generation data from ITE *Trip Generation*, 7th Edition
B AM/PM rates correspond to peak of adjacent street traffic (if data available)
C Includes weekday rates only
D Total trips include pass-by trips
E Pass-by rates from ITE *Trip Generation Handbook*, 2004
F Worksheet is intended as a planning tool. Verify results w/ ITE *Trip Generation*, 7th Edition
G Enter data only in aqua shaded cells
H Comments on typical building sizes based on internet search results.

Trip Generation Planner (ITE 7th Edition)

Weekday Trip Generation ***Project Name*** Medical Office Building
Trips Based on Average Rates or Equations ***Project Number*** 097311001.1

Kimley-Horn and Associates, Inc.

ITE Code	Land Use Description	Independent Variable	No. of Units	Avg Rate or Eq	Trip Rates: Daily Rate	AM Rate	PM Rate	Total Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out	New Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out
610	Hospital	1,000 Sq Ft		Avg	17.57	1.20	1.18														
620	Nursing Home	Bed(s)		Avg	2.37	0.17	0.22														
630	Clinic	1,000 Sq Ft		Avg	31.45	*	5.18														
710	General Office Building *(1)*	1,000 Sq Ft		Avg	11.01	1.55	1.49														
714	Corporate Headquarters *(1)*	1,000 Sq Ft		Avg	7.98	1.49	1.40														
715	Single Tenant Office Building *(1)*	1,000 Sq Ft		Avg	11.57	1.80	1.73														
720	Medical-Dental Office Building	1,000 Sq Ft	36	Avg	36.13	2.48	3.72	1301	89	134	70	19	36	98	1301	89	134	70	19	36	98
730	Government Office Building *(1)*	1,000 Sq Ft		Avg	68.93	5.88	11.03														
731	State Motor Vehicles Department	1,000 Sq Ft		Avg	166.02	9.84	17.09														
732	US Post Office	1,000 Sq Ft		Avg	108.19	8.02	10.89														
733	Government Office Complex	1,000 Sq Ft		Avg	27.92	2.21	2.85														
750	Office Park *(1)*	1,000 Sq Ft		Avg	11.42	1.74	1.50														
760	Research and Development Center *(1)*	1,000 Sq Ft		Avg	8.11	1.24	1.08														
770	Business Park *(1)*	1,000 Sq Ft		Avg	12.76	1.43	1.29														
							Totals	1301	89	134	70	19	36	98	1301	89	134	70	19	36	98
					40%		Reduction	520	36	54	28	8	14	39							
							Grand Total	781	53	80	42	11	22	59							

Notes:
(1) AM and/or PM rates correspond to peak hour of generator

A Trip generation data from ITE *Trip Generation*, 7th Edition
B AM/PM rates correspond to peak of adjacent street traffic (if data available)
C Includes weekday rates only
D Total trips include pass-by trips
E Pass-by rates from ITE *Trip Generation Handbook*, 2004
F Worksheet is intended as a planning tool. Verify results w/ ITE *Trip Generation*, 7th Edition
G Enter data only in aqua shaded cells
H Comments on typical building sizes based on internet search results.

Trip Generation Planner (ITE 7th Edition)

Weekday Trip Generation — *Project Name*: Commons at Dallas Ranch (senior care facility)
Trips Based on Average Rates or Equations — *Project Number*: 097311001.1

Kimley-Horn and Associates, Inc.

ITE Code	Land Use Description	Independent Variable	No. of Units	Avg Rate or Eq	Trip Rates: Daily Rate	AM Rate	PM Rate	Total Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out	New Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out
110	General Light Industrial	1,000 Sq Ft		Avg	6.97	0.92	0.98														
120	General Heavy Industrial	1,000 Sq Ft		Avg	1.50	0.51	0.68														
130	Industrial Park	1,000 Sq Ft		Avg	6.96	0.84	0.86														
140	Manufacturing	1,000 Sq Ft		Avg	3.82	0.73	0.74														
14X	Concrete Batch Plant	100 Cu Yd(s)/Day		Avg	*	4.94	2.32														
150	Warehousing	1,000 Sq Ft		Avg	4.96	0.45	0.47														
151	Mini-Warehouse	1,000 Sq Ft		Avg	2.50	0.15	0.26														
152	High-Cube Warehouse	1,000 Sq Ft		Avg	*	*	0.12														
170	Utilities	1,000 Sq Ft		Avg	*	0.80	0.76														
210	Single-Family Detached Housing	Dwelling Unit(s)		Avg	9.57	0.75	1.01														
220	Apartment	Dwelling Unit(s)		Avg	6.72	0.51	0.62														
221	Low-Rise Apartment	Occ. Dwelling Unit(s)		Avg	6.59	0.46	0.58														
222	High-Rise Apartment	Dwelling Unit(s)		Avg	4.20	0.30	0.35														
223	Mid-Rise Apartment	Dwelling Unit(s)		Avg	*	0.30	0.39														
224	Rental Townhouse	Dwelling Unit(s)		Avg	*	0.70	0.72														
230	Residential Condominium/Townhouse	Dwelling Unit(s)		Avg	5.86	0.44	0.52														
231	Low-Rise Residential Condominium/Townhouse	Dwelling Unit(s)		Avg	*	0.67	0.78														
232	High-Rise Residential Condominium/Townhouse	Dwelling Unit(s)		Avg	4.18	0.34	0.38														
233	Luxury Condominium/Townhouse	Occ. Dwelling Unit(s)		Avg	*	0.56	0.55														
240	Mobile Home Park	Occ. Dwelling Unit(s)		Avg	4.99	0.44	0.59														
251	Senior Adult Housing-Detached	Dwelling Unit(s)		Avg	3.71	0.20	0.26														
251X-a	Senior Adult Housing (CA Pulte Dell Webb)	Dwelling Unit(s)		Avg	3.96	0.17	0.23														
252	Senior Adult Housing-Attached	Occ. Dwelling Unit(s)	25	Avg	3.48	0.08	0.11	87	2	3	1	1	2	1	87	2	3	1	1	2	1
253	Congregate Care Facility	Dwelling Unit(s)		Avg	2.02	0.06	0.17														
254	Assisted Living	Bed(s)		Avg	2.66	0.14	0.22														
255	Continuing Care Retirement Community	Occupied Unit(s)		Avg	2.81	0.18	0.29														
260	Recreational Homes	Dwelling Unit(s)		Avg	3.18	0.16	0.26														
270	Residential Planned Unit Development	Dwelling Unit(s)		Avg	7.50	0.51	0.62														
							Totals	87	2	3	1	1	2	1	87	2	3	1	1	2	1
					14%		Reduction	12	0	0	0	0	0	0							
							Grand Total	75	2	3	1	1	2	1							

Notes:
(1) AM and/or PM rates correspond to peak hour of generator

A Trip generation data from ITE *Trip Generation*, 7th Edition
B AM/PM rates correspond to peak of adjacent street traffic (if data available)
C Includes weekday rates only
D Total trips include pass-by trips
E Pass-by rates from ITE *Trip Generation Handbook*, 2004
F Worksheet is intended as a planning tool. Verify results w/ ITE *Trip Generation*, 7th Edition
G Enter data only in aqua shaded cells
H Comments on typical building sizes based on internet search results.

Trip Generation Planner (ITE 7th Edition)

Weekday Trip Generation — *Project Name*: County Square Market (Asian Food)
Trips Based on Average Rates or Equations — *Project Number*: 097311001.1

Kimley-Horn and Associates, Inc.

ITE Code	Land Use Description	Independent Variable	No. of Units	Avg Rate or Eq	Trip Rates: Daily Rate	AM Rate	PM Rate	Total Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out	New Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out
812	Building Materials and Lumber Store	1,000 Sq Ft		Avg	45.16	2.60	4.49														
813	Free Standing Discount Superstore	1,000 Sq Ft		Avg	49.21	1.84	3.87														
813X-a	Free Standing Discount Superstore (200+ KSF)	1,000 Sq Ft		Avg			5.50														
814	Specialty Retail Center	1,000 Sq Ft		Avg	44.32	*	2.71														
815	Free Standing Discount Store	1,000 Sq Ft		Avg	56.02	0.84	5.06														
816	Hardware/Paint Store	1,000 Sq Ft		Avg	51.29	1.08	4.84														
817	Nursery/Garden Center	1,000 Sq Ft		Avg	36.08	1.31	3.80														
818	Nursery (Wholesale)	1,000 Sq Ft		Avg	39.00	2.40	5.17														
820	Shopping Center	1,000 Sq Ft		Avg	42.94	1.03	3.75														
82X-a	Kohl's Free Standing Department Store	1,000 Sq Ft		Avg	*	0.40	1.90														
823	Factory Outlet Center	1,000 Sq Ft		Avg	26.59	0.67	2.29														
841	New Car Sales	1,000 Sq Ft		Avg	33.34	2.05	2.64														
843	Automobile Parts Sales	1,000 Sq Ft		Avg	61.91	2.21	5.98														
848	Tire Store	1,000 Sq Ft		Avg	24.87	2.89	4.15														
849	Tire Superstore	1,000 Sq Ft		Avg	20.36	1.34	2.11														
850	Supermarket	1,000 Sq Ft	30.86	Avg	102.24	3.25	10.45	3155	100	322	61	39	164	158	3155	100	206	61	39	105	101
851	Convenience Market (Open 24 Hours)	1,000 Sq Ft		Avg	737.99	67.03	52.41														
852	Convenience Market (Open 15-16 Hours)	1,000 Sq Ft		Avg	*	31.02	34.57														
853	Convenience Market w/ Gasoline Pumps	Fueling Position(s)		Avg	542.60	17.17	19.22														
854	Discount Supermarket	1,000 Sq Ft		Avg	96.82	2.74	8.90														
860	Wholesale Market	1,000 Sq Ft		Avg	6.73	0.50	0.21														
861	Discount Club	1,000 Sq Ft		Avg	41.80	0.58	4.24														
862	Home Improvement Superstore	1,000 Sq Ft		Avg	29.80	1.20	2.45														
863	Electronics Superstore	1,000 Sq Ft		Avg	45.04	0.28	4.50														
864	Toy/Children's Superstore	1,000 Sq Ft		Avg	*	*	4.99														
865	Baby Superstore	1,000 Sq Ft		Avg	*	*	1.82														
866	Pet Supply Superstore	1,000 Sq Ft		Avg	*	*	4.96														
867	Office Supply Superstore	1,000 Sq Ft		Avg	*	*	3.40														
868	Book Superstore	1,000 Sq Ft		Avg	*	*	19.53														
869	Discount Home Furnishing Superstore	1,000 Sq Ft		Avg	47.81	*	4.01														
870	Apparel Store	1,000 Sq Ft		Avg	66.40	1.00	3.83														
879	Arts and Crafts Store *(1)*	1,000 Sq Ft		Avg	56.55	4.65	6.21														
880	Pharmacy/Drugstore w/o Drive-Through Window	1,000 Sq Ft		Avg	90.06	3.20	8.42														
881	Pharmacy/Drugstore w/ Drive-Through Window	1,000 Sq Ft		Avg	88.16	2.66	8.62														
890	Furniture Store	1,000 Sq Ft		Avg	5.06	0.17	0.46														
896	Video Rental Store	1,000 Sq Ft		Avg	*	*	13.60														
							Totals	3155	100	322	61	39	164	158	3155	100	206	61	39	105	101
					55%		Reduction	1735	55	177	34	21	90	87							
							Grand Total	1420	45	145	27	18	74	71							

Notes:
(1) AM and/or PM rates correspond to peak hour of generator

A Trip generation data from ITE *Trip Generation*, 7th Edition
B AM/PM rates correspond to peak of adjacent street traffic (if data available)
C Includes weekday rates only
D Total trips include pass-by trips
E Pass-by rates from ITE *Trip Generation Handbook*, 2004
F Worksheet is intended as a planning tool. Verify results w/ ITE *Trip Generation*, 7th Edition
G Enter data only in aqua shaded cells
H Comments on typical building sizes based on internet search results.

Trip Generation Planner (ITE 7th Edition)

Weekday Trip Generation ***Project Name*** Antioch Surgical Center
Trips Based on Average Rates or Equations ***Project Number*** 097311001.1

Kimley-Horn and Associates, Inc.

ITE Code	Land Use Description	Independent Variable	No. of Units	Avg Rate or Eq	Trip Rates: Daily Rate	AM Rate	PM Rate	Total Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out	New Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out
610	Hospital	1,000 Sq Ft		Avg	17.57	1.20	1.18														
620	Nursing Home	Bed(s)		Avg	2.37	0.17	0.22														
630	Clinic	1,000 Sq Ft		Avg	31.45	*	5.18														
710	General Office Building *(1)*	1,000 Sq Ft		Avg	11.01	1.55	1.49														
714	Corporate Headquarters *(1)*	1,000 Sq Ft		Avg	7.98	1.49	1.40														
715	Single Tenant Office Building *(1)*	1,000 Sq Ft		Avg	11.57	1.80	1.73														
720	Medical-Dental Office Building	1,000 Sq Ft	107	Avg	36.13	2.48	3.72	3866	265	398	209	56	107	291	3866	265	398	209	56	107	291
730	Government Office Building *(1)*	1,000 Sq Ft		Avg	68.93	5.88	11.03														
731	State Motor Vehicles Department	1,000 Sq Ft		Avg	166.02	9.84	17.09														
732	US Post Office	1,000 Sq Ft		Avg	108.19	8.02	10.89														
733	Government Office Complex	1,000 Sq Ft		Avg	27.92	2.21	2.85														
750	Office Park *(1)*	1,000 Sq Ft		Avg	11.42	1.74	1.50														
760	Research and Development Center *(1)*	1,000 Sq Ft		Avg	8.11	1.24	1.08														
770	Business Park *(1)*	1,000 Sq Ft		Avg	12.76	1.43	1.29														
							Totals	3866	265	398	209	56	107	291	3866	265	398	209	56	107	291
					40%		Reduction	1546	106	159	84	22	43	116							
							Grand Total	2320	159	239	125	34	64	175							

Notes:
(1) AM and/or PM rates correspond to peak hour of generator

A Trip generation data from ITE *Trip Generation*, 7th Edition
B AM/PM rates correspond to peak of adjacent street traffic (if data available)
C Includes weekday rates only
D Total trips include pass-by trips
E Pass-by rates from ITE *Trip Generation Handbook*, 2004
F Worksheet is intended as a planning tool. Verify results w/ ITE *Trip Generation*, 7th Edition
G Enter data only in aqua shaded cells
H Comments on typical building sizes based on internet search results.

Trip Generation Planner (ITE 7th Edition)

Weekday Trip Generation ***Project Name*** Hillcrest Professional Center
Trips Based on Average Rates or Equations ***Project Number*** 097311001.1

Kimley-Horn and Associates, Inc.

ITE Code	Land Use Description	Independent Variable	No. of Units	Avg Rate or Eq	Trip Rates: Daily Rate	AM Rate	PM Rate	Total Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out	New Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out
610	Hospital	1,000 Sq Ft		Avg	17.57	1.20	1.18														
620	Nursing Home	Bed(s)		Avg	2.37	0.17	0.22														
630	Clinic	1,000 Sq Ft		Avg	31.45	*	5.18														
710	General Office Building *(1)*	1,000 Sq Ft	31.26	Avg	11.01	1.55	1.49	344	48	47	42	6	8	39	344	48	47	42	6	8	39
714	Corporate Headquarters *(1)*	1,000 Sq Ft		Avg	7.98	1.49	1.40														
715	Single Tenant Office Building *(1)*	1,000 Sq Ft		Avg	11.57	1.80	1.73														
720	Medical-Dental Office Building	1,000 Sq Ft		Avg	36.13	2.48	3.72														
730	Government Office Building *(1)*	1,000 Sq Ft		Avg	68.93	5.88	11.03														
731	State Motor Vehicles Department	1,000 Sq Ft		Avg	166.02	9.84	17.09														
732	US Post Office	1,000 Sq Ft		Avg	108.19	8.02	10.89														
733	Government Office Complex	1,000 Sq Ft		Avg	27.92	2.21	2.85														
750	Office Park *(1)*	1,000 Sq Ft		Avg	11.42	1.74	1.50														
760	Research and Development Center *(1)*	1,000 Sq Ft		Avg	8.11	1.24	1.08														
770	Business Park *(1)*	1,000 Sq Ft		Avg	12.76	1.43	1.29														
							Totals	344	48	47	42	6	8	39	344	48	47	42	6	8	39
					23%		Reduction	79	11	11	10	1	2	9							
							Grand Total	265	37	36	32	5	6	30							

Notes:
(1) AM and/or PM rates correspond to peak hour of generator

A Trip generation data from ITE *Trip Generation*, 7th Edition
B AM/PM rates correspond to peak of adjacent street traffic (if data available)
C Includes weekday rates only
D Total trips include pass-by trips
E Pass-by rates from ITE *Trip Generation Handbook*, 2004
F Worksheet is intended as a planning tool. Verify results w/ ITE *Trip Generation*, 7th Edition
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H Comments on typical building sizes based on internet search results.

Trip Generation Planner (ITE 7th Edition)

Weekday Trip Generation | ***Project Name*** | Non-Senior Homes
Trips Based on Average Rates or Equations | ***Project Number*** | 097311001.1

Kimley-Horn and Associates, Inc.

ITE Code	Land Use Description	Independent Variable	No. of Units	Avg Rate or Eq	Trip Rates: Daily Rate	AM Rate	PM Rate	Total Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out	New Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out
110	General Light Industrial	1,000 Sq Ft		Avg	6.97	0.92	0.98														
120	General Heavy Industrial	1,000 Sq Ft		Avg	1.50	0.51	0.58														
130	Industrial Park	1,000 Sq Ft		Avg	6.96	0.84	0.86														
140	Manufacturing	1,000 Sq Ft		Avg	3.82	0.73	0.74														
14X	Concrete Batch Plant	100 Cu Yd(s)/Day		Avg	*	4.94	2.32														
150	Warehousing	1,000 Sq Ft		Avg	4.96	0.45	0.47														
151	Mini-Warehouse	1,000 Sq Ft		Avg	2.50	0.15	0.26														
152	High-Cube Warehouse	1,000 Sq Ft		Avg	*	*	0.12														
170	Utilities	1,000 Sq Ft		Avg	*	0.80	0.76														
210	Single-Family Detached Housing	Dwelling Unit(s)	300	Avg	9.57	0.75	1.01	2871	225	303	56	169	191	112	2871	225	303	56	169	191	112
220	Apartment	Dwelling Unit(s)		Avg	6.72	0.51	0.62														
221	Low-Rise Apartment	Occ. Dwelling Unit(s)		Avg	6.59	0.46	0.58														
222	High-Rise Apartment	Dwelling Unit(s)		Avg	4.20	0.30	0.35														
223	Mid-Rise Apartment	Dwelling Unit(s)		Avg	*	0.30	0.39														
224	Rental Townhouse	Dwelling Unit(s)		Avg	*	0.70	0.72														
230	Residential Condominium/Townhouse	Dwelling Unit(s)		Avg	5.86	0.44	0.52														
231	Low-Rise Residential Condominium/Townhouse	Dwelling Unit(s)		Avg	*	0.67	0.78														
232	High-Rise Residential Condominium/Townhouse	Dwelling Unit(s)		Avg	4.18	0.34	0.38														
233	Luxury Condominium/Townhouse	Occ. Dwelling Unit(s)		Avg	*	0.56	0.55														
240	Mobile Home Park	Occ. Dwelling Unit(s)		Avg	4.99	0.44	0.59														
251	Senior Adult Housing-Detached	Dwelling Unit(s)		Avg	3.71	0.20	0.26														
251X-a	Senior Adult Housing (CA Pulte Dell Webb)	Dwelling Unit(s)		Avg	3.96	0.17	0.23														
252	Senior Adult Housing-Attached	Occ. Dwelling Unit(s)		Avg	3.48	0.08	0.11														
253	Congregate Care Facility	Dwelling Unit(s)		Avg	2.02	0.06	0.17														
254	Assisted Living	Bed(s)		Avg	2.66	0.14	0.22														
255	Continuing Care Retirement Community	Occupied Unit(s)		Avg	2.81	0.18	0.29														
260	Recreational Homes	Dwelling Unit(s)		Avg	3.16	0.16	0.26														
270	Residential Planned Unit Development	Dwelling Unit(s)		Avg	7.50	0.51	0.62														
							Totals	2871	225	303	56	169	191	112	2871	225	303	56	169	191	112
					14%		Reduction	402	32	42	8	24	27	16							
							Grand Total	2469	194	261	48	145	164	96							

Notes:
(1) AM and/or PM rates correspond to peak hour of generator

A Trip generation data from ITE *Trip Generation*, 7th Edition
B AM/PM rates correspond to peak of adjacent street traffic (if data available)
C Includes weekday rates only
D Total trips include pass-by trips
E Pass-by rates from ITE *Trip Generation Handbook*, 2004
F Worksheet is intended as a planning tool. Verify results w/ ITE *Trip Generation*, 7th Edition
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H Comments on typical building sizes based on internet search results.

Trip Generation Planner (ITE 7th Edition)

Weekday Trip Generation | ***Project Name*** | Balfour Retail Center
Trips Based on Average Rates or Equations | ***Project Number*** | 097311001.1

Kimley-Horn and Associates, Inc.

ITE Code	Land Use Description	Independent Variable	No. of Units	Avg Rate or Eq	Trip Rates: Daily Rate	AM Rate	PM Rate	Total Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out	New Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out
812	Building Materials and Lumber Store	1,000 Sq Ft		Avg	45.16	2.80	4.49														
813	Free Standing Discount Superstore	1,000 Sq Ft		Avg	49.21	1.84	3.87														
813X-a	Free Standing Discount Superstore (200+ KSF)	1,000 Sq Ft		Avg			5.50														
814	Specialty Retail Center	1,000 Sq Ft		Avg	44.32	*	2.71														
815	Free Standing Discount Store	1,000 Sq Ft		Avg	56.02	0.84	5.06														
816	Hardware/Paint Store	1,000 Sq Ft		Avg	51.29	1.08	4.84														
817	Nursery/Garden Center	1,000 Sq Ft		Avg	36.08	1.31	3.80														
818	Nursery (Wholesale)	1,000 Sq Ft		Avg	39.00	2.40	5.17														
820	Shopping Center	1,000 Sq Ft	23.15	Avg	42.94	1.03	3.75	994	24	87	15	9	42	45	994	24	57	15	9	28	29
82X-a	Kohl's Free Standing Department Store	1,000 Sq Ft		Avg	*	0.40	1.90														
823	Factory Outlet Center	1,000 Sq Ft		Avg	26.59	0.67	2.29														
841	New Car Sales	1,000 Sq Ft		Avg	33.34	2.05	2.64														
843	Automobile Parts Sales	1,000 Sq Ft		Avg	61.91	2.21	5.98														
848	Tire Store	1,000 Sq Ft		Avg	24.87	2.69	4.15														
849	Tire Superstore	1,000 Sq Ft		Avg	20.36	1.34	2.11														
850	Supermarket	1,000 Sq Ft		Avg	102.24	3.25	10.45														
851	Convenience Market (Open 24 Hours)	1,000 Sq Ft		Avg	737.99	67.03	52.41														
852	Convenience Market (Open 15-16 Hours)	1,000 Sq Ft		Avg	*	31.02	34.57														
853	Convenience Market w/ Gasoline Pumps	Fueling Position(s)		Avg	542.60	17.17	19.22														
854	Discount Supermarket	1,000 Sq Ft		Avg	96.82	2.74	8.90														
860	Wholesale Market	1,000 Sq Ft		Avg	6.73	0.50	0.21														
861	Discount Club	1,000 Sq Ft		Avg	41.80	0.58	4.24														
862	Home Improvement Superstore	1,000 Sq Ft		Avg	29.80	1.20	2.45														
863	Electronics Superstore	1,000 Sq Ft		Avg	45.04	0.28	4.50														
864	Toy/Children's Superstore	1,000 Sq Ft		Avg	*	*	4.99														
865	Baby Superstore	1,000 Sq Ft		Avg	*	*	1.82														
866	Pet Supply Superstore	1,000 Sq Ft		Avg	*	*	4.96														
867	Office Supply Superstore	1,000 Sq Ft		Avg	*	*	3.40														
868	Book Superstore	1,000 Sq Ft		Avg	*	*	10.53														
869	Discount Home Furnishing Superstore	1,000 Sq Ft		Avg	47.81	*	4.01														
870	Apparel Store	1,000 Sq Ft		Avg	66.40	1.00	3.83														
879	Arts and Crafts Store *(1)*	1,000 Sq Ft		Avg	56.55	4.65	6.21														
880	Pharmacy/Drugstore w/o Drive-Through Window	1,000 Sq Ft		Avg	90.06	3.20	8.42														
881	Pharmacy/Drugstore w/ Drive-Through Window	1,000 Sq Ft		Avg	88.16	2.66	8.62														
890	Furniture Store	1,000 Sq Ft		Avg	5.06	0.17	0.46														
896	Video Rental Store	1,000 Sq Ft		Avg	*	*	13.60														
							Totals	994	24	87	15	9	42	45	994	24	57	15	9	28	29
					53%		Reduction	527	13	46	8	5	22	24							
							Grand Total	467	11	41	7	4	20	21							

Notes:
(1) AM and/or PM rates correspond to peak hour of generator

A Trip generation data from ITE *Trip Generation*, 7th Edition
B AM/PM rates correspond to peak of adjacent street traffic (if data available)
C Includes weekday rates only
D Total trips include pass-by trips
E Pass-by rates from ITE *Trip Generation Handbook*, 2004
F Worksheet is intended as a planning tool. Verify results w/ ITE *Trip Generation*, 7th Edition
G Enter data only in aqua shaded cells
H Comments on typical building sizes based on internet search results.

Trip Generation Planner (ITE 7th Edition)

Weekday Trip Generation ***Project Name*** Bridle Gate
Trips Based on Average Rates or Equations ***Project Number*** 097311001.1

Kimley-Horn and Associates, Inc.

ITE Code	Land Use Description	Independent Variable	No. of Units	Avg Rate or Eq	Trip Rates: Daily Rate	AM Rate	PM Rate	Total Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out	New Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out
110	General Light Industrial	1,000 Sq Ft		Avg	6.97	0.92	0.98														
120	General Heavy Industrial	1,000 Sq Ft		Avg	1.50	0.51	0.68														
130	Industrial Park	1,000 Sq Ft		Avg	6.96	0.84	0.86														
140	Manufacturing	1,000 Sq Ft		Avg	3.82	0.73	0.74														
14X	Concrete Batch Plant	100 Cu Yd(s)/Day		Avg	*	4.94	2.32														
150	Warehousing	1,000 Sq Ft		Avg	4.96	0.45	0.47														
151	Mini-Warehouse	1,000 Sq Ft		Avg	2.50	0.15	0.26														
152	High-Cube Warehouse	1,000 Sq Ft		Avg	*	*	0.12														
170	Utilities	1,000 Sq Ft		Avg	*	0.80	0.76														
210	Single-Family Detached Housing	Dwelling Unit(s)	166	Avg	9.57	0.75	1.01	1589	125	168	31	94	106	62	1589	125	168	31	94	106	62
220	Apartment	Dwelling Unit(s)		Avg	6.72	0.51	0.62														
221	Low-Rise Apartment	Occ. Dwelling Unit(s)		Avg	6.59	0.46	0.58														
222	High-Rise Apartment	Dwelling Unit(s)		Avg	4.20	0.30	0.35														
223	Mid-Rise Apartment	Dwelling Unit(s)		Avg	*	0.30	0.39														
224	Rental Townhouse	Dwelling Unit(s)		Avg	*	0.70	0.72														
230	Residential Condominium/Townhouse	Dwelling Unit(s)		Avg	5.86	0.44	0.52														
231	Low-Rise Residential Condominium/Townhouse	Dwelling Unit(s)		Avg	*	0.67	0.78														
232	High-Rise Residential Condominium/Townhouse	Dwelling Unit(s)		Avg	4.18	0.34	0.38														
233	Luxury Condominium/Townhouse	Occ. Dwelling Unit(s)		Avg	*	0.56	0.55														
240	Mobile Home Park	Occ. Dwelling Unit(s)		Avg	4.99	0.44	0.59														
251	Senior Adult Housing-Detached	Dwelling Unit(s)		Avg	3.71	0.20	0.26														
251X-a	Senior Adult Housing (CA Pulte Dell Webb)	Dwelling Unit(s)		Avg	3.96	0.17	0.23														
252	Senior Adult Housing-Attached	Occ. Dwelling Unit(s)		Avg	3.48	0.08	0.11														
253	Congregate Care Facility	Dwelling Unit(s)		Avg	2.02	0.06	0.17														
254	Assisted Living	Bed(s)		Avg	2.66	0.14	0.22														
255	Continuing Care Retirement Community	Occupied Unit(s)		Avg	2.81	0.18	0.29														
260	Recreational Homes	Dwelling Unit(s)		Avg	3.16	0.16	0.26														
270	Residential Planned Unit Development	Dwelling Unit(s)		Avg	7.50	0.51	0.62														
							Totals	1589	125	168	31	94	106	62	1589	125	168	31	94	106	62
					14%		Reduction	222	18	24	4	13	15	9							
							Grand Total	1367	108	144	27	81	91	53							

Notes:
(1) AM and/or PM rates correspond to peak hour of generator

A Trip generation data from ITE *Trip Generation*, 7th Edition
B AM/PM rates correspond to peak of adjacent street traffic (if data available)
C Includes weekday rates only
D Total trips include pass-by trips
E Pass-by rates from ITE *Trip Generation Handbook*, 2004
F Worksheet is intended as a planning tool. Verify results w/ ITE *Trip Generation*, 7th Edition
G Enter data only in aqua shaded cells
H Comments on typical building sizes based on internet search results.

Trip Generation Planner (ITE 7th Edition)

Weekday Trip Generation ***Project Name*** Blackhawk-Nunn-Cox Property
Trips Based on Average Rates or Equations ***Project Number*** 097311001.1

Kimley-Horn and Associates, Inc.

ITE Code	Land Use Description	Independent Variable	No. of Units	Avg Rate or Eq	Trip Rates: Daily Rate	AM Rate	PM Rate	Total Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out	New Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out
110	General Light Industrial	1,000 Sq Ft		Avg	6.97	0.92	0.98														
120	General Heavy Industrial	1,000 Sq Ft		Avg	1.50	0.51	0.68														
130	Industrial Park	1,000 Sq Ft		Avg	6.96	0.84	0.86														
140	Manufacturing	1,000 Sq Ft		Avg	3.82	0.73	0.74														
14X	Concrete Batch Plant	100 Cu Yd(s)/Day		Avg	*	4.94	2.32														
150	Warehousing	1,000 Sq Ft		Avg	4.96	0.45	0.47														
151	Mini-Warehouse	1,000 Sq Ft		Avg	2.50	0.15	0.26														
152	High-Cube Warehouse	1,000 Sq Ft		Avg	*	*	0.12														
170	Utilities	1,000 Sq Ft		Avg	*	0.80	0.76														
210	Single-Family Detached Housing	Dwelling Unit(s)	66	Avg	9.57	0.75	1.01	632	50	67	13	37	42	25	632	50	67	13	37	42	25
220	Apartment	Dwelling Unit(s)		Avg	6.72	0.51	0.62														
221	Low-Rise Apartment	Occ. Dwelling Unit(s)		Avg	6.59	0.46	0.58														
222	High-Rise Apartment	Dwelling Unit(s)		Avg	4.20	0.30	0.35														
223	Mid-Rise Apartment	Dwelling Unit(s)		Avg	*	0.30	0.39														
224	Rental Townhouse	Dwelling Unit(s)		Avg	*	0.70	0.72														
230	Residential Condominium/Townhouse	Dwelling Unit(s)		Avg	5.86	0.44	0.52														
231	Low-Rise Residential Condominium/Townhouse	Dwelling Unit(s)		Avg	*	0.67	0.78														
232	High-Rise Residential Condominium/Townhouse	Dwelling Unit(s)		Avg	4.18	0.34	0.38														
233	Luxury Condominium/Townhouse	Occ. Dwelling Unit(s)		Avg	*	0.56	0.55														
240	Mobile Home Park	Occ. Dwelling Unit(s)		Avg	4.99	0.44	0.59														
251	Senior Adult Housing-Detached	Dwelling Unit(s)		Avg	3.71	0.20	0.26														
251X-a	Senior Adult Housing (CA Pulte Dell Webb)	Dwelling Unit(s)		Avg	3.96	0.17	0.23														
252	Senior Adult Housing-Attached	Occ. Dwelling Unit(s)		Avg	3.48	0.08	0.11														
253	Congregate Care Facility	Dwelling Unit(s)		Avg	2.02	0.06	0.17														
254	Assisted Living	Bed(s)		Avg	2.66	0.14	0.22														
255	Continuing Care Retirement Community	Occupied Unit(s)		Avg	2.81	0.18	0.29														
260	Recreational Homes	Dwelling Unit(s)		Avg	3.16	0.16	0.26														
270	Residential Planned Unit Development	Dwelling Unit(s)		Avg	7.50	0.51	0.62														
							Totals	632	50	67	13	37	42	25	632	50	67	13	37	42	25
					14%		Reduction	88	7	9	2	5	6	4							
							Grand Total	544	43	58	11	32	36	22							

Notes:
(1) AM and/or PM rates correspond to peak hour of generator

A Trip generation data from ITE *Trip Generation*, 7th Edition
B AM/PM rates correspond to peak of adjacent street traffic (if data available)
C Includes weekday rates only
D Total trips include pass-by trips
E Pass-by rates from ITE *Trip Generation Handbook*, 2004
F Worksheet is intended as a planning tool. Verify results w/ ITE *Trip Generation*, 7th Edition
G Enter data only in aqua shaded cells
H Comments on typical building sizes based on internet search results.

Trip Generation Planner (ITE 7th Edition)

Weekday Trip Generation
Trips Based on Average Rates or Equations

Project Name Meridian Professional Office
Project Number 097311001.1

Kimley-Horn and Associates, Inc.

ITE Code	Land Use Description	Independent Variable	No. of Units	Avg Rate or Eq	Trip Rates: Daily Rate	AM Rate	PM Rate	Total Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out	New Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out
610	Hospital	1,000 Sq Ft		Avg	17.57	1.20	1.18														
620	Nursing Home	Bed(s)		Avg	2.37	0.17	0.22														
630	Clinic	1,000 Sq Ft		Avg	31.45	*	5.18														
710	General Office Building *(1)*	1,000 Sq Ft	32.036	Avg	11.01	1.55	1.49	353	50	48	44	6	8	40	353	50	48	44	6	8	40
714	Corporate Headquarters *(1)*	1,000 Sq Ft		Avg	7.98	1.49	1.40														
715	Single Tenant Office Building *(1)*	1,000 Sq Ft		Avg	11.57	1.80	1.73														
720	Medical-Dental Office Building	1,000 Sq Ft		Avg	36.13	2.48	3.72														
730	Government Office Building *(1)*	1,000 Sq Ft		Avg	68.93	5.88	11.03														
731	State Motor Vehicles Department	1,000 Sq Ft		Avg	166.02	9.84	17.09														
732	US Post Office	1,000 Sq Ft		Avg	108.19	8.02	10.89														
733	Government Office Complex	1,000 Sq Ft		Avg	27.92	2.21	2.85														
750	Office Park *(1)*	1,000 Sq Ft		Avg	11.42	1.74	1.50														
760	Research and Development Center *(1)*	1,000 Sq Ft		Avg	8.11	1.24	1.08														
770	Business Park *(1)*	1,000 Sq Ft		Avg	12.76	1.43	1.29														
							Totals	353	50	48	44	6	8	40	353	50	48	44	6	8	40
					23%		Reduction	81	12	11	10	1	2	9							
							Grand Total	272	39	37	34	5	6	31							

Notes:
(1) AM and/or PM rates correspond to peak hour of generator

A Trip generation data from ITE *Trip Generation*, 7th Edition
B AM/PM rates correspond to peak of adjacent street traffic (if data available)
C Includes weekday rates only
D Total trips include pass-by trips
E Pass-by rates from ITE *Trip Generation Handbook*, 2004
F Worksheet is intended as a planning tool. Verify results w/ ITE *Trip Generation*, 7th Edition
G Enter data only in aqua shaded cells
H Comments on typical building sizes based on internet search results.

Trip Generation Planner (ITE 7th Edition)

Weekday Trip Generation
Trips Based on Average Rates or Equations

Project Name Balfour Retail
Project Number 097311001.1

Kimley-Horn and Associates, Inc.

ITE Code	Land Use Description	Independent Variable	No. of Units	Avg Rate or Eq	Trip Rates: Daily Rate	AM Rate	PM Rate	Total Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out	New Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out
812	Building Materials and Lumber Store	1,000 Sq Ft		Avg	45.16	2.80	4.49														
813	Free Standing Discount Superstore	1,000 Sq Ft		Avg	49.21	1.84	3.87														
813X-a	Free Standing Discount Superstore (200+ KSF)	1,000 Sq Ft		Avg			5.50														
814	Specialty Retail Center	1,000 Sq Ft		Avg	44.32	*	2.71														
815	Free Standing Discount Store	1,000 Sq Ft		Avg	56.02	0.84	5.06														
816	Hardware/Paint Store	1,000 Sq Ft		Avg	51.29	1.08	4.84														
817	Nursery/Garden Center	1,000 Sq Ft		Avg	36.08	1.31	3.80														
818	Nursery (Wholesale)	1,000 Sq Ft		Avg	39.00	2.40	5.17														
820	Shopping Center	1,000 Sq Ft	26.7	Avg	42.94	1.03	3.75	1146	28	100	17	11	48	52	1146	28	66	17	11	32	34
82X-a	Kohl's Free Standing Department Store	1,000 Sq Ft		Avg	*	0.40	1.90														
823	Factory Outlet Center	1,000 Sq Ft		Avg	26.59	0.67	2.29														
841	New Car Sales	1,000 Sq Ft		Avg	33.34	2.05	2.64														
843	Automobile Parts Sales	1,000 Sq Ft		Avg	61.91	2.21	5.98														
848	Tire Store	1,000 Sq Ft		Avg	24.87	2.89	4.15														
849	Tire Superstore	1,000 Sq Ft		Avg	20.36	1.34	2.11														
850	Supermarket	1,000 Sq Ft		Avg	102.24	3.25	10.45														
851	Convenience Market (Open 24 Hours)	1,000 Sq Ft		Avg	737.99	67.03	52.41														
852	Convenience Market (Open 15-16 Hours)	1,000 Sq Ft		Avg	*	31.02	34.57														
853	Convenience Market w/ Gasoline Pumps	Fueling Position(s)		Avg	542.60	17.17	19.22														
854	Discount Supermarket	1,000 Sq Ft		Avg	98.82	2.74	8.90														
860	Wholesale Market	1,000 Sq Ft		Avg	6.73	0.50	0.21														
861	Discount Club	1,000 Sq Ft		Avg	41.80	0.56	4.24														
862	Home Improvement Superstore	1,000 Sq Ft		Avg	29.80	1.20	2.45														
863	Electronics Superstore	1,000 Sq Ft		Avg	45.04	0.28	4.50														
864	Toy/Children's Superstore	1,000 Sq Ft		Avg	*	*	4.99														
865	Baby Superstore	1,000 Sq Ft		Avg	*	*	1.82														
866	Pet Supply Superstore	1,000 Sq Ft		Avg	*	*	4.96														
867	Office Supply Superstore	1,000 Sq Ft		Avg	*	*	3.40														
868	Book Superstore	1,000 Sq Ft		Avg	*	*	19.53														
869	Discount Home Furnishing Superstore	1,000 Sq Ft		Avg	47.81	*	4.01														
870	Apparel Store	1,000 Sq Ft		Avg	66.40	1.00	3.83														
879	Arts and Crafts Store *(1)*	1,000 Sq Ft		Avg	56.55	4.65	6.21														
880	Pharmacy/Drugstore w/o Drive-Through Window	1,000 Sq Ft		Avg	90.06	3.20	8.42														
881	Pharmacy/Drugstore w/ Drive-Through Window	1,000 Sq Ft		Avg	88.16	2.66	8.62														
890	Furniture Store	1,000 Sq Ft		Avg	5.06	0.17	0.46														
896	Video Rental Store	1,000 Sq Ft		Avg	*	*	13.60														
							Totals	1146	28	100	17	11	48	52	1146	28	66	17	11	32	34
					53%		Reduction	607	15	53	9	6	25	28							
							Grand Total	539	13	47	8	5	23	24							

Notes:
(1) AM and/or PM rates correspond to peak hour of generator

A Trip generation data from ITE *Trip Generation*, 7th Edition
B AM/PM rates correspond to peak of adjacent street traffic (if data available)
C Includes weekday rates only
D Total trips include pass-by trips
E Pass-by rates from ITE *Trip Generation Handbook*, 2004
F Worksheet is intended as a planning tool. Verify results w/ ITE *Trip Generation*, 7th Edition
G Enter data only in aqua shaded cells
H Comments on typical building sizes based on internet search results.

Trip Generation Planner (ITE 7th Edition)

Weekday Trip Generation ***Project Name*** Vic Stewarts
Trips Based on Average Rates or Equations ***Project Number*** 097311001.1

Kimley-Horn and Associates, Inc.

ITE Code	Land Use Description	Independent Variable	No. of Units	Avg Rate or Eq	Trip Rates: Daily Rate	AM Rate	PM Rate	Total Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out	New Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out
911	Walk-In Bank	1,000 Sq Ft		Avg	156.48	4.07	33.15														
912	Drive-In Bank	1,000 Sq Ft		Avg	246.49	12.34	45.74														
931	Quality Restaurant	1,000 Sq Ft		Avg	89.95	0.81	7.49														
932	High-Turnover (Sit-Down) Restaurant	1,000 Sq Ft	31.457	Avg	127.15	11.52	10.92	4000	362	344	188	174	210	134	4000	362	196	188	174	120	76
933	Fast-Food Restaurant w/o D.T (General)	1,000 Sq Ft		Avg	716.00	43.87	26.15														
933-1	Fast-Food Restaurant w/o D.T - Yogurt	1,000 Sq Ft		Avg	*	*	15.12														
933-2	Fast-Food Restaurant w/o D.T - Coffee	1,000 Sq Ft		Avg	*	73.03	28.79														
933-3	Fast-Food Restaurant w/o D.T - Donut/Ice Cream	1,000 Sq Ft		Avg	*	*	20.00														
933-4	Fast-Food Restaurant w/o D.T - Donut/Sandwich	1,000 Sq Ft		Avg	*	59.75	13.00														
933-5	Fast-Food Restaurant w/o D.T - Bagel	1,000 Sq Ft		Avg	*	70.22	*														
933-6	Fast-Food Restaurant w/o D.T - Bread	1,000 Sq Ft		Avg	*	4.33	28.00														
934	Fast-Food Restaurant w/ D.T. (General)	1,000 Sq Ft		Avg	496.12	53.11	34.64														
934-1	Fast-Food Restaurant w/ D.T.- Coffee/Bread/Sand	1,000 Sq Ft		Avg	*	183.07	38.90														
935	Fast-Food Restaurant w/ D.T. No Indoor Seats	1,000 Sq Ft		Avg	*	*	153.85														
935-1	Fast-Food Restaurant w/ D.T. Coffee/Espresso	1,000 Sq Ft		Avg	1400.00	260.00	60.00														
936	Drinking Place	1,000 Sq Ft		Avg	*	*	11.34														
941	Quick Lubrication Vehicle Shop	Servicing Position(s)		Avg	40.00	3.00	5.19														
942	Automobile Care Center	1,000 Sq Ft		Avg	*	2.94	3.38														
943	Automobile Parts and Service Center	1,000 Sq Ft		Avg	*	*	4.46														
944	Gasoline/Service Station	Fueling Position(s)		Avg	168.56	12.07	13.86														
945	Gasoline Station w/ Convenience Market	Fueling Position(s)		Avg	162.78	10.06	13.38														
946	Gasoline Station w/ Conv. Mkt. & Car Wash	Fueling Position(s)		Avg	152.84	10.84	13.33														
947	Self-Service Car Wash *(1)*	Wash Stall(s)		Avg	108.00	8.00	5.54														
948	Automated Car Wash	1,000 Sq Ft		Avg	*	*	14.12														
							Totals	4000	362	344	188	174	210	134	4000	362	196	188	174	120	76
					49%		Reduction	1960	177	169	92	85	103	66							
							Grand Total	2040	185	175	96	89	107	68							

Notes:
(1) AM and/or PM rates correspond to peak hour of generator

A Trip generation data from ITE *Trip Generation*, 7th Edition
B AM/PM rates correspond to peak of adjacent street traffic (if data available)
C Includes weekday rates only
D Total trips include pass-by trips
E Pass-by rates from ITE *Trip Generation Handbook*, 2004
F Worksheet is intended as a planning tool. Verify results w/ ITE *Trip Generation*, 7th Edition
G Enter data only in aqua shaded cells
H Comments on typical building sizes based on internet search results.

Trip Generation Planner (ITE 7th Edition)

Weekday Trip Generation ***Project Name*** Kindercare
Trips Based on Average Rates or Equations ***Project Number*** 097311001.1

Kimley-Horn and Associates, Inc.

ITE Code	Land Use Description	Independent Variable	No. of Units	Avg Rate or Eq	Trip Rates: Daily Rate	AM Rate	PM Rate	Total Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out	New Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out
501	Military Base	Employee(s)		Avg	1.78	0.39	0.39														
520	Elementary School *(1)*	Student(s)		Avg	1.29	0.42	0.28														
522	Middle School	Student(s)		Avg	1.62	0.53	0.15														
530	High School	Student(s)		Avg	1.71	0.41	0.14														
534	Private School (K-8) *(1)*	Student(s)		Avg	*	0.90	0.61														
536	Private School (K-12)	Student(s)		Avg	2.48	0.79	0.17														
540	Junior/Community College	Student(s)		Avg	1.20	0.12	0.12														
550	University/College	Student(s)		Avg	2.38	0.21	0.21														
560	Church	1,000 Sq Ft		Avg	9.11	0.72	0.66														
561	Synagogue	1,000 Sq Ft		Avg	10.64	0.14	1.69														
565	Day Care Center	1,000 Sq Ft	9.3	Avg	79.26	12.79	13.18	737	119	123	63	56	58	65	737	119	123	63	56	58	65
566	Cemetery	Acre(s)		Avg	4.73	0.17	0.84														
571	Prison	Bed(s)		Avg	*	0.10	0.05														
590	Library	1,000 Sq Ft		Avg	54.00	1.06	7.09														
591	Lodge/Fraternal Organization	Member(s)		Avg	0.29	0.01	0.03														
610	Hospital	1,000 Sq Ft		Avg	17.57	1.20	1.18														
620	Nursing Home	Bed(s)		Avg	2.37	0.17	0.22														
630	Clinic	1,000 Sq Ft		Avg	31.45	*	5.18														
							Totals	737	119	123	63	56	58	65	737	119	123	63	56	58	65
							Reduction														
							Grand Total	737	119	123	63	56	58	65							

Notes:
(1) AM and/or PM rates correspond to peak hour of generator

A Trip generation data from ITE *Trip Generation*, 7th Edition
B AM/PM rates correspond to peak of adjacent street traffic (if data available)
C Includes weekday rates only
D Total trips include pass-by trips
E Pass-by rates from ITE *Trip Generation Handbook*, 2004
F Worksheet is intended as a planning tool. Verify results w/ ITE *Trip Generation*, 7th Edition
G Enter data only in aqua shaded cells
H Comments on typical building sizes based on internet search results.

Trip Generation Planner (ITE 7th Edition)

Weekday Trip Generation — *Project Name*: Senior Apartments - Cox Property
Trips Based on Average Rates or Equations — *Project Number*: 097311001.1

Kimley-Horn and Associates, Inc.

ITE Code	Land Use Description	Independent Variable	No. of Units	Avg Rate or Eq	Trip Rates: Daily Rate	AM Rate	PM Rate	Total Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out	New Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out
110	General Light Industrial	1,000 Sq Ft		Avg	6.97	0.92	0.98														
120	General Heavy Industrial	1,000 Sq Ft		Avg	1.50	0.51	0.68														
130	Industrial Park	1,000 Sq Ft		Avg	6.96	0.84	0.86														
140	Manufacturing	1,000 Sq Ft		Avg	3.82	0.73	0.74														
14X	Concrete Batch Plant	100 Cu Yd(s)/Day		Avg	*	4.94	2.32														
150	Warehousing	1,000 Sq Ft		Avg	4.96	0.45	0.47														
151	Mini-Warehouse	1,000 Sq Ft		Avg	2.50	0.15	0.26														
152	High-Cube Warehouse	1,000 Sq Ft		Avg	*	*	0.12														
170	Utilities	1,000 Sq Ft		Avg	*	0.80	0.76														
210	Single-Family Detached Housing	Dwelling Unit(s)		Avg	9.57	0.75	1.01														
220	Apartment	Dwelling Unit(s)		Avg	6.72	0.51	0.62														
221	Low-Rise Apartment	Occ. Dwelling Unit(s)		Avg	6.59	0.46	0.58														
222	High-Rise Apartment	Dwelling Unit(s)		Avg	4.20	0.30	0.35														
223	Mid-Rise Apartment	Dwelling Unit(s)		Avg	*	0.30	0.39														
224	Rental Townhouse	Dwelling Unit(s)		Avg	*	0.70	0.72														
230	Residential Condominium/Townhouse	Dwelling Unit(s)		Avg	5.86	0.44	0.52														
231	Low-Rise Residential Condominium/Townhouse	Dwelling Unit(s)		Avg	*	0.67	0.78														
232	High-Rise Residential Condominium/Townhouse	Dwelling Unit(s)		Avg	4.18	0.34	0.38														
233	Luxury Condominium/Townhouse	Occ. Dwelling Unit(s)		Avg	*	0.56	0.55														
240	Mobile Home Park	Occ. Dwelling Unit(s)		Avg	4.99	0.44	0.59														
251	Senior Adult Housing-Detached	Dwelling Unit(s)		Avg	3.71	0.20	0.26														
251X-a	Senior Adult Housing (CA Pulte Dell Webb)	Dwelling Unit(s)		Avg	3.96	0.17	0.23														
252	Senior Adult Housing-Attached	Occ. Dwelling Unit(s)	120	Avg	3.48	0.08	0.11	418	10	13	5	5	8	5	418	10	13	5	5	8	5
253	Congregate Care Facility	Dwelling Unit(s)		Avg	2.02	0.06	0.17														
254	Assisted Living	Bed(s)		Avg	2.66	0.14	0.22														
255	Continuing Care Retirement Community	Occupied Unit(s)		Avg	2.81	0.18	0.29														
260	Recreational Homes	Dwelling Unit(s)		Avg	3.16	0.16	0.26														
270	Residential Planned Unit Development	Dwelling Unit(s)		Avg	7.50	0.51	0.62														
310	Hotel	Room(s)		Avg	8.17	0.56	0.59														
311	All Suites Hotel	Room(s)		Avg	4.90	0.38	0.40														
312	Business Hotel	Occupied Room(s)		Avg	7.27	0.58	0.62														
320	Motel	Room(s)		Avg	5.63	0.45	0.47														
330	Resort Hotel	Room(s)		Avg	*	0.31	0.42														
							Totals	418	10	13	5	5	8	5	418	10	13	5	5	8	5
					14%		Reduction	59	1	2	1	1	1	1							
							Grand Total	359	9	11	4	4	7	4							

Notes:
(1) AM and/or PM rates correspond to peak hour of generator

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B AM/PM rates correspond to peak of adjacent street traffic (if data available)
C Includes weekday rates only
D Total trips include pass-by trips
E Pass-by rates from ITE *Trip Generation Handbook*, 2004
F Worksheet is intended as a planning tool. Verify results w/ ITE *Trip Generation*, 7th Edition
G Enter data only in aqua shaded cells
H Comments on typical building sizes based on internet search results.

Trip Generation Planner (ITE 7th Edition)

Weekday Trip Generation — *Project Name*: Deer Valley Estates
Trips Based on Average Rates or Equations — *Project Number*: 097311001.1

Kimley-Horn and Associates, Inc.

ITE Code	Land Use Description	Independent Variable	No. of Units	Avg Rate or Eq	Trip Rates: Daily Rate	AM Rate	PM Rate	Total Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out	New Trips: Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out
110	General Light Industrial	1,000 Sq Ft		Avg	6.97	0.92	0.98														
120	General Heavy Industrial	1,000 Sq Ft		Avg	1.50	0.51	0.68														
130	Industrial Park	1,000 Sq Ft		Avg	6.96	0.84	0.86														
140	Manufacturing	1,000 Sq Ft		Avg	3.82	0.73	0.74														
14X	Concrete Batch Plant	100 Cu Yd(s)/Day		Avg	*	4.94	2.32														
150	Warehousing	1,000 Sq Ft		Avg	4.96	0.45	0.47														
151	Mini-Warehouse	1,000 Sq Ft		Avg	2.50	0.15	0.26														
152	High-Cube Warehouse	1,000 Sq Ft		Avg	*	*	0.12														
170	Utilities	1,000 Sq Ft		Avg	*	0.80	0.76														
210	Single-Family Detached Housing	Dwelling Unit(s)	136	Avg	9.57	0.75	1.01	1302	102	137	26	76	86	51	1302	102	137	26	76	86	51
220	Apartment	Dwelling Unit(s)		Avg	6.72	0.51	0.62														
221	Low-Rise Apartment	Occ. Dwelling Unit(s)		Avg	6.59	0.46	0.58														
222	High-Rise Apartment	Dwelling Unit(s)		Avg	4.20	0.30	0.35														
223	Mid-Rise Apartment	Dwelling Unit(s)		Avg	*	0.30	0.39														
224	Rental Townhouse	Dwelling Unit(s)		Avg	*	0.70	0.72														
230	Residential Condominium/Townhouse	Dwelling Unit(s)		Avg	5.86	0.44	0.52														
231	Low-Rise Residential Condominium/Townhouse	Dwelling Unit(s)		Avg	*	0.67	0.78														
232	High-Rise Residential Condominium/Townhouse	Dwelling Unit(s)		Avg	4.18	0.34	0.38														
233	Luxury Condominium/Townhouse	Occ. Dwelling Unit(s)		Avg	*	0.56	0.55														
240	Mobile Home Park	Occ. Dwelling Unit(s)		Avg	4.99	0.44	0.59														
251	Senior Adult Housing-Detached	Dwelling Unit(s)		Avg	3.71	0.20	0.26														
251X-a	Senior Adult Housing (CA Pulte Dell Webb)	Dwelling Unit(s)		Avg	3.96	0.17	0.23														
252	Senior Adult Housing-Attached	Occ. Dwelling Unit(s)		Avg	3.48	0.08	0.11														
253	Congregate Care Facility	Dwelling Unit(s)		Avg	2.02	0.06	0.17														
254	Assisted Living	Bed(s)		Avg	2.66	0.14	0.22														
255	Continuing Care Retirement Community	Occupied Unit(s)		Avg	2.81	0.18	0.29														
260	Recreational Homes	Dwelling Unit(s)		Avg	3.16	0.16	0.26														
270	Residential Planned Unit Development	Dwelling Unit(s)		Avg	7.50	0.51	0.62														
							Totals	1302	102	137	26	76	86	51	1302	102	137	26	76	86	51
					14%		Reduction	182	14	19	4	11	12	7							
							Grand Total	1120	88	118	22	65	74	44							

Notes:
(1) AM and/or PM rates correspond to peak hour of generator

A Trip generation data from ITE *Trip Generation*, 7th Edition
B AM/PM rates correspond to peak of adjacent street traffic (if data available)
C Includes weekday rates only
D Total trips include pass-by trips
E Pass-by rates from ITE *Trip Generation Handbook*, 2004
F Worksheet is intended as a planning tool. Verify results w/ ITE *Trip Generation*, 7th Edition
G Enter data only in aqua shaded cells
H Comments on typical building sizes based on internet search results.

NEAR-TERM TRAFFIC CONDITIONS
(TRAFFIX & SYNCRHO)

Antioch Aviano Adult Community TIA
Near Term AM

Impact Analysis Report
Level Of Service

Intersection	Base Del/ LOS Veh	V/ C	Future Del/ LOS Veh	V/ C	Change in
# 1 Lone Tree Way/Deer Valley Rd	A xxxxx	0.536	D xxxxx	0.803	+ 0.267 V/C
# 2 Deer Valley Road/Marita Drive	A xxxxx	0.325	A xxxxx	0.396	+ 0.071 V/C
# 3 Deer Valley Road/Prewitt Ranch	A xxxxx	0.504	A xxxxx	0.599	+ 0.095 V/C
# 4 Deer Valley Road/Wellness Way	A xxxxx	0.338	A xxxxx	0.479	+ 0.141 V/C
# 5 Deer Valley Road/Kaiser	A xxxxx	0.247	A xxxxx	0.352	+ 0.105 V/C
# 6 Deer Valley Road/Sand Creek Ro	A xxxxx	0.262	A xxxxx	0.338	+ 0.075 V/C
# 7 Kaiser/Sand Creek Road	xxxxx	0.000	A xxxxx	0.021	+ 0.021 V/C
# 8 PARK/Sand Creek Road	xxxxx	0.000	A xxxxx	0.256	+ 0.256 V/C
# 9 Edgewood South Access/Sand Cre	xxxxx	0.000	A xxxxx	0.117	+ 0.117 V/C
# 10 Hillcrest Avenue/Sand Creek Ro	xxxxx	0.000	A xxxxx	0.256	+ 0.256 V/C
# 11 Hillcrest Avenue/East Edgewood	xxxxx	0.000	A xxxxx	0.128	+ 0.128 V/C
# 12 Hillcrest Ave/Prewett Ranch Dr	A xxxxx	0.164	A xxxxx	0.272	+ 0.108 V/C
# 13 Hillcrest Avenue/Vista Grande	A xxxxx	0.106	A xxxxx	0.185	+ 0.080 V/C
# 14 Lone Tree Way/Hillcrest Avenue	A xxxxx	0.538	B xxxxx	0.652	+ 0.114 V/C
# 15 Lone Tree Way/Vista Grande Dri	A xxxxx	0.390	A xxxxx	0.472	+ 0.082 V/C
# 16 Lone Tree Way/Heidorn Ranch Ro	A xxxxx	0.321	A xxxxx	0.367	+ 0.047 V/C
# 17 Lone Tree Way/Canada Valley Ro	A xxxxx	0.559	B xxxxx	0.689	+ 0.130 V/C
# 18 Lone Tree Way/SB SR-4 Bypass	A xxxxx	0.325	A xxxxx	0.413	+ 0.088 V/C
# 19 Lone Tree Way/NB SR-4 Bypass (	A xxxxx	0.464	A xxxxx	0.537	+ 0.073 V/C
# 20 Heidorn Ranch Road/Sand Creek	xxxxx	0.000	xxxxx	0.000	+ 0.000 V/C
# 21 SR-4 Bypass SB Ramps/Sand Cree	A xxxxx	0.132	A xxxxx	0.160	+ 0.028 V/C
# 22 SR-4 Bypass NB Ramps/Sand Cree	A xxxxx	0.340	A xxxxx	0.393	+ 0.054 V/C
# 23 Mammoth/Deer Valley	A xxxxx	0.175	A xxxxx	0.237	+ 0.062 V/C

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Antioch Aviano Adult Community TIA
Near Term AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #1 Lone Tree Way/Deer Valley Rd

Cycle (sec): 130 Critical Vol./Cap.(X): 0.803
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 116 Level Of Service: D

Street Name:	Deer Valley Road						Lone Tree Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	15	32	0	15	32	0	15	32	0	15	32	0
Lanes:	2	0 2	0 1	2	0 1	1 0	1	0 2	0 1	1	0 2	0 1
Volume Module:												
Base Vol:	220	279	98	435	435	19	59	828	163	153	892	197
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	220	279	98	435	435	19	59	828	163	153	892	197
Added Vol:	74	39	131	93	44	0	0	357	66	130	332	68
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	294	318	229	528	479	19	59	1185	229	283	1224	265
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	294	318	229	528	479	19	59	1185	229	283	1224	265
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	294	318	229	528	479	19	59	1185	229	283	1224	265
RTOR Reduct:	0	0	229	0	0	0	0	0	162	0	0	265
RTOR Vol:	294	318	0	528	479	19	59	1185	67	283	1224	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	294	318	0	528	479	19	59	1185	67	283	1224	0
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	2.00	1.00	2.00	1.92	0.08	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	3000	3300	1650	3000	3174	126	1650	3300	1650	1650	3300	1650
Capacity Analysis Module:												
Vol/Sat:	0.10	0.10	0.00	0.18	0.15	0.15	0.04	0.36	0.04	0.17	0.37	0.00
Crit Volume:		159		264				593		283		
Crit Moves:		****		****				****		****		

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Antioch Aviano Adult Community TIA
Near Term AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #2 Deer Valley Road/Marita Drive

Cycle (sec): 100 Critical Vol./Cap.(X): 0.396
Loss Time (sec): 3 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 17 Level Of Service: A

Street Name:	Deer Valley Road						Marita Drive					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 1	1 0	1	0 1	1 0	1	0 0	1 0	1	0 0	1 0
Volume Module:												
Base Vol:	65	610	33	195	570	13	18	10	20	12	1	15
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	65	610	33	195	570	13	18	10	20	12	1	15
Added Vol:	0	244	0	0	240	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	65	854	33	195	810	13	18	10	20	12	1	15
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	65	854	33	195	810	13	18	10	20	12	1	15
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	65	854	33	195	810	13	18	10	20	12	1	15
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Vol:	65	854	33	195	810	13	18	10	20	12	1	15
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	65	854	33	195	810	13	18	10	20	12	1	15
Saturation Flow Module:												
Sat/Lane:	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.93	0.07	1.00	1.97	0.03	1.00	0.33	0.67	1.00	0.06	0.94
Final Sat.:	1720	3312	128	1720	3386	54	1720	573	1147	1720	108	1613
Capacity Analysis Module:												
Vol/Sat:	0.04	0.26	0.26	0.11	0.24	0.24	0.01	0.02	0.02	0.01	0.01	0.01
Crit Volume:			444	195				30		12		
Crit Moves:			****	****				****		****		

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Antioch Aviano Adult Community TIA
Near Term AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #3 Deer Valley Road/Prewitt Ranch Drive

Cycle (sec): 100 Critical Vol./Cap.(X): 0.599
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 57 Level Of Service: A

Street Name:	Deer Valley Road						Prewitt Ranch Drive					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 1	1 0	1	0 1	1 0	1	0 0	1 0	1	0 0	1 0
Volume Module:												
Base Vol:	37	339	76	135	367	117	79	205	67	41	230	180
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	37	339	76	135	367	117	79	205	67	41	230	180
Added Vol:	0	185	0	5	213	22	46	0	0	0	0	13
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	37	524	76	140	580	139	125	205	67	41	230	193
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	37	524	76	140	580	139	125	205	67	41	230	193
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	37	524	76	140	580	139	125	205	67	41	230	193
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Vol:	37	524	76	140	580	139	125	205	67	41	230	193
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	37	524	76	140	580	139	125	205	67	41	230	193
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.75	0.25	1.00	1.61	0.39	1.00	0.75	0.25	1.00	0.54	0.46
Final Sat.:	1650	2882	418	1650	2662	638	1650	1244	406	1650	897	753
Capacity Analysis Module:												
Vol/Sat:	0.02	0.18	0.18	0.08	0.22	0.22	0.08	0.16	0.16	0.02	0.26	0.26
Crit Volume:		300		140			125				423	
Crit Moves:		****		****			****				****	

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Antioch Aviano Adult Community TIA
Near Term AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #4 Deer Valley Road/Wellness Way

Cycle (sec): 100 Critical Vol./Cap.(X): 0.479
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 36 Level Of Service: A

Street Name:	Deer Valley Road						Wellness Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 2	0 1	1	0 1	0 0	0	0 0	0 0	1	0 0	0 1
Volume Module:												
Base Vol:	0	416	0	0	558	0	0	0	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	416	0	0	558	0	0	0	0	0	0	0
Added Vol:	0	124	2	20	193	0	0	0	0	5	0	60
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	540	2	20	751	0	0	0	0	5	0	60
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	540	2	20	751	0	0	0	0	5	0	60
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	540	2	20	751	0	0	0	0	5	0	60
RTOR Reduct:	0	0	2	0	0	0	0	0	0	0	0	20
RTOR Vol:	0	540	0	20	751	0	0	0	0	5	0	40
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	540	0	20	751	0	0	0	0	5	0	40
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Final Sat.:	1650	3300	1650	1650	1650	0	0	0	0	1650	0	1650
Capacity Analysis Module:												
Vol/Sat:	0.00	0.16	0.00	0.01	0.46	0.00	0.00	0.00	0.00	0.00	0.00	0.02
Crit Volume:	0				751			0				40
Crit Moves:	****				****							****

Antioch Aviano Adult Community TIA
Near Term AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #5 Deer Valley Road/Kaiser

Cycle (sec): 100 Critical Vol./Cap.(X): 0.352
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 29 Level Of Service: A

Street Name:	Deer Valley Road						Kaiser					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Protected			Permitted			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0 2	0 1	1	0 1	0 0	0	0 0	0 0	1	0 0	0 1
Volume Module:												
Base Vol:	0	397	36	158	400	0	0	0	0	8	0	19
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	397	36	158	400	0	0	0	0	8	0	19
Added Vol:	0	37	35	181	17	0	0	0	0	17	0	89
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	434	71	339	417	0	0	0	0	25	0	108
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	434	71	339	417	0	0	0	0	25	0	108
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	434	71	339	417	0	0	0	0	25	0	108
RTOR Reduct:	0	0	25	0	0	0	0	0	0	0	0	108
RTOR Vol:	0	434	46	339	417	0	0	0	0	25	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	434	46	339	417	0	0	0	0	25	0	0
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	2.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Final Sat.:	0	3300	1650	1650	1650	0	0	0	0	1650	0	1650
Capacity Analysis Module:												
Vol/Sat:	0.00	0.13	0.03	0.21	0.25	0.00	0.00	0.00	0.00	0.02	0.00	0.00
Crit Volume:		217		339				0			25	
Crit Moves:		****		****							****	

Antioch Aviano Adult Community TIA
Near Term AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #6 Deer Valley Road/Sand Creek Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.338
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 28 Level Of Service: A

Street Name:	Deer Valley Road						Sand Creek Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 0	1 0	1	0 0	1 0	1	0 0	1 0	0	1 0	0 1
Volume Module:												
Base Vol:	0	433	0	0	408	0	0	0	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	433	0	0	408	0	0	0	0	0	0	0
Added Vol:	0	72	35	0	33	1	0	0	0	17	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	505	35	0	441	1	0	0	0	17	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	505	35	0	441	1	0	0	0	17	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	505	35	0	441	1	0	0	0	17	0	0
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Vol:	0	505	35	0	441	1	0	0	0	17	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	505	35	0	441	1	0	0	0	17	0	0
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.94	0.06	1.00	0.99	0.01	1.00	1.00	0.00	1.00	0.00	1.00
Final Sat.:	1650	1543	107	1650	1646	4	1650	1650	0	1650	0	1650
Capacity Analysis Module:												
Vol/Sat:	0.00	0.33	0.33	0.00	0.27	0.27	0.00	0.00	0.00	0.01	0.00	0.00
Crit Volume:			540	0			0			17		
Crit Moves:			****	****						****		

Antioch Aviano Adult Community TIA
Near Term AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #7 Kaiser/Sand Creek Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.021
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 19 Level Of Service: A

Street Name:	Kaiser						Sand Creek Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Protected			Protected			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0 0	0 0	1	0 0	0 1	1	0 2	0 0	0	0 2	0 1
Volume Module:												
Base Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	0	0	0	0	0
Added Vol:	0	0	0	0	0	17	35	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	0	0	17	35	0	0	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	0	0	17	35	0	0	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	0	0	17	35	0	0	0	0	0
RTOR Reduct:	0	0	0	0	0	17	0	0	0	0	0	0
RTOR Vol:	0	0	0	0	0	0	35	0	0	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	0	0	0	35	0	0	0	0	0
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	2.00	0.00	0.00	2.00	1.00
Final Sat.:	0	0	0	1650	0	1650	1650	3300	0	0	3300	1650
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00
Crit Volume:		0			0		35				0	
Crit Moves:							****					

Antioch Aviano Adult Community TIA
Near Term AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #8 PARK/Sand Creek Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.256
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 25 Level Of Service: A

Street Name:	PARK						Sand Creek Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Protected			Protected			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0 0	0 0	1	0 0	0 1	1	0 2	0 0	0	0 2	0 1
Volume Module:												
Base Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	0	0	0	0	0
Added Vol:	0	0	0	205	0	0	0	0	0	0	0	422
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	205	0	0	0	0	0	0	0	422
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	205	0	0	0	0	0	0	0	422
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	205	0	0	0	0	0	0	0	422
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	205
RTOR Vol:	0	0	0	205	0	0	0	0	0	0	0	217
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	205	0	0	0	0	0	0	0	217
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	2.00	0.00	0.00	2.00	1.00
Final Sat.:	0	0	0	1650	0	1650	1650	3300	0	0	3300	1650
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13
Crit Volume:		0		205			0					217
Crit Moves:				****								****

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Antioch Aviano Adult Community TIA
Near Term AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #9 Edgewood South Access/Sand Creek Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.117
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 26 Level Of Service: A

Street Name:	Edgewood South Access						Sand Creek Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0 0	0 0	1	0 0	0 1	1	0 2	0 0	0	0 2	0 1
Volume Module:												
Base Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	0	0	0	0	0
Added Vol:	0	0	0	0	0	0	0	205	0	0	422	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	0	0	0	0	205	0	0	422	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	0	0	0	0	205	0	0	422	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	0	0	0	0	205	0	0	422	0
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Vol:	0	0	0	0	0	0	0	205	0	0	422	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	0	0	0	0	205	0	0	422	0
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	2.00	0.00	0.00	2.00	1.00
Final Sat.:	0	0	0	1800	0	1800	1800	3600	0	0	3600	1800
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.12	0.00
Crit Volume:	0				0			0			211	
Crit Moves:							****				****	

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Antioch Aviano Adult Community TIA
Near Term AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #10 Hillcrest Avenue/Sand Creek Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.256
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 25 Level Of Service: A

Street Name:	Hillcrest Avenue						Sand Creek Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Protected			Protected			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0 0	0 0	1	0 0	0 1	1	0 2	0 0	0	0 2	0 1
Volume Module:												
Base Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	0	0	0	0	0
Added Vol:	0	0	0	0	0	422	205	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	0	0	422	205	0	0	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	0	0	422	205	0	0	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	0	0	422	205	0	0	0	0	0
RTOR Reduct:	0	0	0	0	0	205	0	0	0	0	0	0
RTOR Vol:	0	0	0	0	0	217	205	0	0	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	0	0	217	205	0	0	0	0	0
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	2.00	0.00	0.00	2.00	1.00
Final Sat.:	0	0	0	1650	0	1650	1650	3300	0	0	3300	1650
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.00	0.00	0.13	0.12	0.00	0.00	0.00	0.00	0.00
Crit Volume:		0				217	205				0	
Crit Moves:						****	****					

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Antioch Aviano Adult Community TIA
Near Term AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #11 Hillcrest Avenue/East Edgewood Access

Cycle (sec): 100 Critical Vol./Cap.(X): 0.128
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 21 Level Of Service: A

Street Name:	Hillcrest Avenue						East Edgewood Access					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Permitted			Protected			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 2	0 0	0	0 1	1 0	1	0 0	0 1	0	0 0	0 0
Volume Module:												
Base Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	0	0	0	0	0
Added Vol:	0	205	0	0	422	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	205	0	0	422	0	0	0	0	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	205	0	0	422	0	0	0	0	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	205	0	0	422	0	0	0	0	0	0	0
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Vol:	0	205	0	0	422	0	0	0	0	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	205	0	0	422	0	0	0	0	0	0	0
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	0.00	0.00	2.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	1650	3300	0	0	3300	0	1650	0	1650	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.06	0.00	0.00	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Crit Volume:	0				211			0			0	
Crit Moves:	****				****							

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Antioch Aviano Adult Community TIA
Near Term AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #12 Hillcrest Ave/Prewett Ranch Dr

Cycle (sec): 100 Critical Vol./Cap.(X): 0.272
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 31 Level Of Service: A

Street Name:	Hillcrest Ave						Prewett Dr					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 1	1 0	1	0 1	1 0	1	0 0	1 0	1	0 0	1 0
Volume Module:												
Base Vol:	0	0	0	13	0	108	121	30	0	0	47	6
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	13	0	108	121	30	0	0	47	6
Added Vol:	4	237	0	0	423	1	4	0	8	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	4	237	0	13	423	109	125	30	8	0	47	6
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	4	237	0	13	423	109	125	30	8	0	47	6
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	4	237	0	13	423	109	125	30	8	0	47	6
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Vol:	4	237	0	13	423	109	125	30	8	0	47	6
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	4	237	0	13	423	109	125	30	8	0	47	6
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	0.00	1.00	1.59	0.41	1.00	0.79	0.21	1.00	0.89	0.11
Final Sat.:	1650	3300	0	1650	2624	676	1650	1303	347	1650	1463	187
Capacity Analysis Module:												
Vol/Sat:	0.00	0.07	0.00	0.01	0.16	0.16	0.08	0.02	0.02	0.00	0.03	0.03
Crit Volume:	4				266		125					53
Crit Moves:	****				****		****					****

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Antioch Aviano Adult Community TIA
Near Term AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #13 Hillcrest Avenue/Vista Grande Drive

Cycle (sec): 100 Critical Vol./Cap.(X): 0.185
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 26 Level Of Service: A

Street Name:	Hillcrest Avenue						Vista Grande Drive					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Protected			Permitted			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0 1	1 0	1	0 2	0 0	0	0 0	0 0	1	0 0	0 1
Volume Module:												
Base Vol:	0	80	49	55	70	0	0	0	0	55	0	56
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	80	49	55	70	0	0	0	0	55	0	56
Added Vol:	0	237	4	1	416	0	0	0	0	8	0	3
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	317	53	56	486	0	0	0	0	63	0	59
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	317	53	56	486	0	0	0	0	63	0	59
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	317	53	56	486	0	0	0	0	63	0	59
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	56
RTOR Vol:	0	317	53	56	486	0	0	0	0	63	0	3
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	317	53	56	486	0	0	0	0	63	0	3
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	1.71	0.29	1.00	2.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Final Sat.:	0	2827	473	1650	3300	0	0	0	0	1650	0	1650
Capacity Analysis Module:												
Vol/Sat:	0.00	0.11	0.11	0.03	0.15	0.00	0.00	0.00	0.00	0.04	0.00	0.00
Crit Volume:		185			243			0		63		
Crit Moves:					****					****		

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Antioch Aviano Adult Community TIA
Near Term AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #14 Lone Tree Way/Hillcrest Avenue

Cycle (sec): 130 Critical Vol./Cap.(X): 0.652
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 66 Level Of Service: B

Street Name:	Hillcrest Avenue						Lone Tree Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 1	1 0	2	0 2	0 1	1	0 2	1 0	1	0 3	0 1
Volume Module:												
Base Vol:	45	73	9	710	83	294	171	640	17	37	857	525
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	45	73	9	710	83	294	171	640	17	37	857	525
Added Vol:	195	30	15	36	45	61	54	180	351	21	274	31
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	240	103	24	746	128	355	225	820	368	58	1131	556
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	240	103	24	746	128	355	225	820	368	58	1131	556
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	240	103	24	746	128	355	225	820	368	58	1131	556
RTOR Reduct:	0	0	0	0	0	225	0	0	0	0	0	410
RTOR Vol:	240	103	24	746	128	130	225	820	368	58	1131	146
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	240	103	24	746	128	130	225	820	368	58	1131	146
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.62	0.38	2.00	2.00	1.00	1.00	2.07	0.93	1.00	3.00	1.00
Final Sat.:	1650	2676	624	3000	3300	1650	1650	3417	1533	1650	4950	1650
Capacity Analysis Module:												
Vol/Sat:	0.15	0.04	0.04	0.25	0.04	0.08	0.14	0.24	0.24	0.04	0.23	0.09
Crit Volume:		64			373			225			377	
Crit Moves:		****			****			****			****	

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Antioch Aviano Adult Community TIA
Near Term AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #15 Lone Tree Way/Vista Grande Drive

Cycle (sec): 130 Critical Vol./Cap.(X): 0.472
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 35 Level Of Service: A

Street Name:	Vista Grande Drive						Lone Tree Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 0	1 0	1	0 0	1 0	1	0 2	1 0	1	0 2	1 0
Volume Module:												
Base Vol:	76	29	92	38	18	30	50	1280	34	42	1359	24
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	76	29	92	38	18	30	50	1280	34	42	1359	24
Added Vol:	13	0	18	7	0	3	1	175	5	8	340	6
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	89	29	110	45	18	33	51	1455	39	50	1699	30
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	89	29	110	45	18	33	51	1455	39	50	1699	30
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	89	29	110	45	18	33	51	1455	39	50	1699	30
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Vol:	89	29	110	45	18	33	51	1455	39	50	1699	30
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	89	29	110	45	18	33	51	1455	39	50	1699	30
Saturation Flow Module:												
Sat/Lane:	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.21	0.79	1.00	0.35	0.65	1.00	2.92	0.08	1.00	2.95	0.05
Final Sat.:	1720	359	1361	1720	607	1113	1720	5025	135	1720	5070	90
Capacity Analysis Module:												
Vol/Sat:	0.05	0.08	0.08	0.03	0.03	0.03	0.03	0.29	0.29	0.03	0.34	0.34
Crit Volume:		139			45			51				576
Crit Moves:		****			****			****				****

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Antioch Aviano Adult Community TIA
Near Term AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #16 Lone Tree Way/Heidorn Ranch Road

Cycle (sec): 120 Critical Vol./Cap.(X): 0.367
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 36 Level Of Service: A

Street Name:	Heidorn Ranch Road								Lone Tree Way							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Split Phase					Split Phase					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0		
Lanes:	2	0	1	0	1	1	0	0	1	0	1	0	2	1	0	1	0	2	1	1
Volume Module:																				
Base Vol:	61	1	21		8	0		1			3	1317		67		26	1317			5
Growth Adj:	1.00	1.00	1.00		1.00	1.00		1.00			1.00	1.00		1.00		1.00	1.00			1.00
Initial Bse:	61	1	21		8	0		1			3	1317		67		26	1317			5
Added Vol:	6	0	6		1	0		0			0	198		2		6	349			2
PasserByVol:	0	0	0		0	0		0			0	0		0		0	0			0
Initial Fut:	67	1	27		9	0		1			3	1515		69		32	1666			7
User Adj:	1.00	1.00	1.00		1.00	1.00		1.00			1.00	1.00		1.00		1.00	1.00			1.00
PHF Adj:	1.00	1.00	1.00		1.00	1.00		1.00			1.00	1.00		1.00		1.00	1.00			1.00
PHF Volume:	67	1	27		9	0		1			3	1515		69		32	1666			7
Reduct Vol:	0	0	0		0	0		0			0	0		0		0	0			0
Reduced Vol:	67	1	27		9	0		1			3	1515		69		32	1666			7
RTOR Reduct:	0	0	27		0	0		0			0	0		0		0	0			7
RTOR Vol:	67	1	0		9	0		1			3	1515		69		32	1666			0
PCE Adj:	1.00	1.00	1.00		1.00	1.00		1.00			1.00	1.00		1.00		1.00	1.00			1.00
MLF Adj:	1.00	1.00	1.00		1.00	1.00		1.00			1.00	1.00		1.00		1.00	1.00			1.00
FinalVolume:	67	1	0		9	0		1			3	1515		69		32	1666			0
Saturation Flow Module:																				
Sat/Lane:	1650	1650	1650		1650	1650		1650			1650	1650		1650		1650	1650			1650
Adjustment:	0.91	1.00	1.00		1.00	1.00		1.00			1.00	1.00		1.00		1.00	1.00			0.91
Lanes:	2.00	1.00	1.00		1.00	0.00		1.00			1.00	2.87		0.13		1.00	3.00			1.00
Final Sat.:	3000	1650	1650		1650	0		1650			1650	4734		216		1650	4950			1500
Capacity Analysis Module:																				
Vol/Sat:	0.02	0.00	0.00		0.01	0.00		0.00			0.00	0.32		0.32		0.02	0.34			0.00
Crit Volume:	34				9							528				32				
Crit Moves:	****				****							****				****				

Antioch Aviano Adult Community TIA
Near Term AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #17 Lone Tree Way/Canada Valley Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.689
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 73 Level Of Service: B

Street Name:	Canada Valley Road								Lone Tree Way							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0		
Lanes:	2	0	0	1	1	1	0	1	0	1	1	0	3	0	1	2	0	3	0	1
Volume Module:																				
Base Vol:	38	33	84		333	47		53			54	1272		84		240	1203			140
Growth Adj:	1.00	1.00	1.00		1.00	1.00		1.00			1.00	1.00		1.00		1.00	1.00			1.00
Initial Bse:	38	33	84		333	47		53			54	1272		84		240	1203			140
Added Vol:	3	6	3		150	18		99			36	164		7		7	257			62
PasserByVol:	0	0	0		0	0		0			0	0		0		0	0			0
Initial Fut:	41	39	87		483	65		152			90	1436		91		247	1460			202
User Adj:	1.00	1.00	1.00		1.00	1.00		1.00			1.00	1.00		1.00		1.00	1.00			1.00
PHF Adj:	1.00	1.00	1.00		1.00	1.00		1.00			1.00	1.00		1.00		1.00	1.00			1.00
PHF Volume:	41	39	87		483	65		152			90	1436		91		247	1460			202
Reduct Vol:	0	0	0		0	0		0			0	0		0		0	0			0
Reduced Vol:	41	39	87		483	65		152			90	1436		91		247	1460			202
RTOR Reduct:	0	0	87		0	0		90			0	0		23		0	0			202
RTOR Vol:	41	39	0		483	65		62			90	1436		68		247	1460			0
PCE Adj:	1.00	1.00	1.00		1.00	1.00		1.00			1.00	1.00		1.00		1.00	1.00			1.00
MLF Adj:	1.00	1.00	1.00		1.00	1.00		1.00			1.00	1.00		1.00		1.00	1.00			1.00
FinalVolume:	41	39	0		483	65		62			90	1436		68		247	1460			0
Saturation Flow Module:																				
Sat/Lane:	1650	1650	1650		1650	1650		1650			1650	1650		1650		1650	1650			1650
Adjustment:	0.91	1.00	0.91		1.00	1.00		1.00			1.00	1.00		1.00		0.91	1.00			1.00
Lanes:	2.00	1.00	1.00		1.00	1.00		1.00			1.00	3.00		1.00		2.00	3.00			1.00
Final Sat.:	3000	1650	1500		1650	1650		1650			1650	4950		1650		3000	4950			1650
Capacity Analysis Module:																				
Vol/Sat:	0.01	0.02	0.00		0.29	0.04		0.04			0.05	0.29		0.04		0.08	0.29			0.00
Crit Volume:		39			483							479				124				
Crit Moves:		****			****							****				****				

Antioch Aviano Adult Community TIA
Near Term AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #18 Lone Tree Way/SB SR-4 Bypass

Cycle (sec): 100 Critical Vol./Cap.(X): 0.413
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 47 Level Of Service: A

Street Name:	SB SR-4 Bypass								Lone Tree Way							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Permitted					Protected					Permitted					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0		
Lanes:	0	0	0	0	0	1	1	0	0	1	0	0	3	0	1	2	0	3	0	0
Volume Module:																				
Base Vol:	0	0	0		0	0		0			0	702		400		182	1609			0
Growth Adj:	1.00	1.00	1.00		1.00	1.00		1.00			1.00	1.00		1.00		1.00	1.00			1.00
Initial Bse:	0	0	0		0	0		0			0	702		400		182	1609			0
Added Vol:	0	0	0		74	0		54			0	254		63		37	272			0
PasserByVol:	0	0	0		0	0		0			0	0		0		0	0			0
Initial Fut:	0	0	0		74	0		54			0	956		463		219	1881			0
User Adj:	1.00	1.00	1.00		1.00	1.00		1.00			1.00	1.00		1.00		1.00	1.00			1.00
PHF Adj:	1.00	1.00	1.00		1.00	1.00		1.00			1.00	1.00		1.00		1.00	1.00			1.00
PHF Volume:	0	0	0		74	0		54			0	956		463		219	1881			0
Reduct Vol:	0	0	0		0	0		0			0	0		0		0	0			0
Reduced Vol:	0	0	0		74	0		54			0	956		463		219	1881			0
RTOR Reduct:	0	0	0		0	0		0			0	0		0		0	0			0
RTOR Vol:	0	0	0		74	0		54			0	956		463		219	1881			0
PCE Adj:	1.00	1.00	1.00		1.00	1.00		1.00			1.00	1.00		1.00		1.00	1.00			1.00
MLF Adj:	1.00	1.00	1.00		1.00	1.00		1.00			1.00	1.00		1.00		1.00	1.00			1.00
FinalVolume:	0	0	0		74	0		54			0	956		463		219	1881			0
Saturation Flow Module:																				
Sat/Lane:	1650	1650	1650		1650	1650		1650			1650	1650		1650		1650	1650			1650
Adjustment:	1.00	1.00	1.00		0.91	1.00		1.00			1.00	1.00		1.00		0.91	1.00			1.00
Lanes:	0.00	0.00	0.00		2.00	0.00		1.00			0.00	3.00		1.00		2.00	3.00			0.00
Final Sat.:	0	0	0		3000	0		1650			0	4950		1650		3000	4950			0
Capacity Analysis Module:																				
Vol/Sat:	0.00	0.00	0.00		0.02	0.00		0.03			0.00	0.19		0.28		0.07	0.38			0.00
Crit Volume:		0						54				319					627			
Crit Moves:								****									****			

Antioch Aviano Adult Community TIA
Near Term AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #19 Lone Tree Way/NB SR-4 Bypass (Jaffrey Way)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.537
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 68 Level Of Service: A

Street Name:	NB SR-4 Bypass (Jaffrey Way)								Lone Tree Way							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Permitted					Permitted					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0		
Lanes:	1	1	0	0	1	0	0	0	0	0	0	0	3	0	1	1	0	3	0	1
Volume Module:																				
Base Vol:	785	0	150		0	0		0			0	691		11		12	1002			0
Growth Adj:	1.00	1.00	1.00		1.00	1.00		1.00			1.00	1.00		1.00		1.00	1.00			1.00
Initial Bse:	785	0	150		0	0		0			0	691		11		12	1002			0
Added Vol:	76	0	36		0	0		0			0	253		75		2	234			58
PasserByVol:	0	0	0		0	0		0			0	0		0		0	0			0
Initial Fut:	861	0	186		0	0		0			0	944		86		14	1236			58
User Adj:	1.00	1.00	1.00		1.00	1.00		1.00			1.00	1.00		1.00		1.00	1.00			1.00
PHF Adj:	1.00	1.00	1.00		1.00	1.00		1.00			1.00	1.00		1.00		1.00	1.00			1.00
PHF Volume:	861	0	186		0	0		0			0	944		86		14	1236			58
Reduct Vol:	0	0	0		0	0		0			0	0		0		0	0			0
Reduced Vol:	861	0	186		0	0		0			0	944		86		14	1236			58
RTOR Reduct:	0	0	14		0	0		0			0	0		86		0	0			0
RTOR Vol:	861	0	172		0	0		0			0	944		0		14	1236			58
PCE Adj:	1.00	1.00	1.00		1.00	1.00		1.00			1.00	1.00		1.00		1.00	1.00			1.00
MLF Adj:	1.00	1.00	1.00		1.00	1.00		1.00			1.00	1.00		1.00		1.00	1.00			1.00
FinalVolume:	861	0	172		0	0		0			0	944		0		14	1236			58
Saturation Flow Module:																				
Sat/Lane:	1650	1650	1650		1650	1650		1650			1650	1650		1650		1650	1650			1650
Adjustment:	0.91	1.00	1.00		1.00	1.00		1.00			1.00	1.00		1.00		1.00	1.00			1.00
Lanes:	2.00	0.00	1.00		0.00	0.00		0.00			0.00	3.00		1.00		1.00	3.00			1.00
Final Sat.:	3000	0	1650		0	0		0			0	4950		1650		1650	4950			1650
Capacity Analysis Module:																				
Vol/Sat:	0.29	0.00	0.10		0.00	0.00		0.00			0.00	0.19		0.00		0.01	0.25			0.04
Crit Volume:	431					0						315					412			
Crit Moves:	****																****			

Antioch Aviano Adult Community TIA
Near Term AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #20 Heidorn Ranch Road/Sand Creek Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.000
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 0 Level Of Service: xxxxxx

Street Name:	Heidorn Ranch Road								Sand Creek Road							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0		
Lanes:	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	
Volume Module:																				
Base Vol:	0	0	0			0	0	0			0	0	0			0	0	0		
Growth Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
Initial Bse:	0	0	0			0	0	0			0	0	0			0	0	0		
Added Vol:	0	1	0			12	0	0			0	0	0			0	0	10		
PasserByVol:	0	0	0			0	0	0			0	0	0			0	0	0		
Initial Fut:	0	1	0			12	0	0			0	0	0			0	0	10		
User Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
PHF Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
PHF Volume:	0	1	0			12	0	0			0	0	0			0	0	10		
Reduct Vol:	0	0	0			0	0	0			0	0	0			0	0	0		
Reduced Vol:	0	1	0			12	0	0			0	0	0			0	0	10		
RTOR Reduct:	0	0	0			0	0	0			0	0	0			0	0	10		
RTOR Vol:	0	1	0			12	0	0			0	0	0			0	0	0		
PCE Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
MLF Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
FinalVolume:	0	1	0			12	0	0			0	0	0			0	0	0		
Saturation Flow Module:																				
Sat/Lane:	0	0	0			0	0	0			0	0	0			0	0	0		
Adjustment:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
Lanes:	0.00	0.00	0.00			0.00	0.00	0.00			0.00	0.00	0.00			0.00	0.00	0.00		
Final Sat.:	0	0	0			0	0	0			0	0	0			0	0	0		
Capacity Analysis Module:																				
Vol/Sat:	0.00	0.00	0.00			0.00	0.00	0.00			0.00	0.00	0.00			0.00	0.00	0.00		
Crit Volume:		0					0					0					0			
Crit Moves:																				

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Antioch Aviano Adult Community TIA
Near Term AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #21 SR-4 Bypass SB Ramps/Sand Creek Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.160
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 22 Level Of Service: A

Street Name:	SR-4 Bypass SB Ramps								Sand Creek Road							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Permitted					Protected					Permitted					Protected				
Rights:	Include					Include					Include					Ignore				
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0		
Lanes:	0	0	0	0	0	1	0	1	0	1	0	0	2	0	1	0	0	2	0	1
Volume Module:																				
Base Vol:	0	0	0			395	0	0			0	0	0			0	0	239		
Growth Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
Initial Bse:	0	0	0			395	0	0			0	0	0			0	0	239		
Added Vol:	0	0	0			31	0	12			0	59	12			0	18	36		
PasserByVol:	0	0	0			0	0	0			0	0	0			0	0	0		
Initial Fut:	0	0	0			426	0	12			0	59	12			0	18	275		
User Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
PHF Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
PHF Volume:	0	0	0			426	0	12			0	59	12			0	18	275		
Reduct Vol:	0	0	0			0	0	0			0	0	0			0	0	0		
Reduced Vol:	0	0	0			426	0	12			0	59	12			0	18	275		
RTOR Reduct:	0	0	0			0	0	0			0	0	0			0	0	0		
RTOR Vol:	0	0	0			426	0	12			0	59	12			0	18	275		
PCE Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
MLF Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
FinalVolume:	0	0	0			426	0	12			0	59	12			0	18	275		
Saturation Flow Module:																				
Sat/Lane:	1650	1650	1650			1650	1650	1650			1650	1650	1650			1650	1650	1650		
Adjustment:	1.00	1.00	1.00			0.91	1.00	0.91			1.00	1.00	1.00			1.00	1.00	1.00		
Lanes:	0.00	0.00	0.00			0.14	0.00	0.01			0.00	0.02	0.01			0.00	0.01	0.17		
Final Sat.:	0	0	0			213	0	13			0	30	12			0	29	283		
Capacity Analysis Module:																				
Vol/Sat:	0.00	0.00	0.00			0.00	0.00	0.00			0.00	0.00	0.00			0.00	0.00	0.00		
Crit Volume:		0					213					30					0			
Crit Moves:							****					****					****			

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Antioch Aviano Adult Community TIA
Near Term AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #22 SR-4 Bypass NB Ramps/Sand Creek Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.393
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 31 Level Of Service: A

Street Name:	SR-4 Bypass NB Ramps								Sand Creek Road							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Permitted					Permitted					Permitted				
Rights:	Include					Include					Include					Include				
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0		
Lanes:	1	0	1	1	0	1	0	0	0	0	0	2	0	2	0	0	0	2	0	1
Volume Module:																				
Base Vol:	0	0	219			0	0	0			0	395	0			0	239	464		
Growth Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
Initial Bse:	0	0	219			0	0	0			0	395	0			0	239	464		
Added Vol:	10	0	16			0	0	0			35	55	0			0	44	64		
PasserByVol:	0	0	0			0	0	0			0	0	0			0	0	0		
Initial Fut:	10	0	235			0	0	0			35	450	0			0	283	528		
User Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
PHF Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
PHF Volume:	10	0	235			0	0	0			35	450	0			0	283	528		
Reduct Vol:	0	0	0			0	0	0			0	0	0			0	0	0		
Reduced Vol:	10	0	235			0	0	0			35	450	0			0	283	528		
RTOR Reduct:	0	0	0			0	0	0			0	0	0			0	0	0		
RTOR Vol:	10	0	235			0	0	0			35	450	0			0	283	528		
PCE Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
MLF Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
FinalVolume:	10	0	235			0	0	0			35	450	0			0	283	528		
Saturation Flow Module:																				
Sat/Lane:	1720	1720	1720			1720	1720	1720			1720	1720	1720			1720	1720	1720		
Adjustment:	0.91	1.00	0.91			1.00	1.00	1.00			0.91	1.00	1.00			1.00	1.00	1.00		
Lanes:	1.00	0.00	2.00			0.00	0.00	0.00			2.00	2.00	0.00			0.00	2.00	1.00		
Final Sat.:	1563	0	3127			0	0	0			3127	3440	0			0	3440	1720		
Capacity Analysis Module:																				
Vol/Sat:	0.01	0.00	0.08			0.00	0.00	0.00			0.01	0.13	0.00			0.00	0.08	0.31		
Crit Volume:			118				0					18						528		
Crit Moves:			****									****						****		

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Antioch Aviano Adult Community TIA
Near Term AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #23 Mammoth/Deer Valley

Cycle (sec): 100 Critical Vol./Cap.(X): 0.237
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 30 Level Of Service: A

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0		
Lanes:	1	0	2	0	0	0	0	1	1	0	1	0	0	0	1	0	0	0	0	0
Volume Module:																				
Base Vol:	10	366	0			0	400	20			81	0	20			0	0	0		
Growth Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
Initial Bse:	10	366	0			0	400	20			81	0	20			0	0	0		
Added Vol:	0	185	0			0	213	0			0	0	0			0	0	0		
PasserByVol:	0	0	0			0	0	0			0	0	0			0	0	0		
Initial Fut:	10	551	0			0	613	20			81	0	20			0	0	0		
User Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
PHF Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
PHF Volume:	10	551	0			0	613	20			81	0	20			0	0	0		
Reduct Vol:	0	0	0			0	0	0			0	0	0			0	0	0		
Reduced Vol:	10	551	0			0	613	20			81	0	20			0	0	0		
RTOR Reduct:	0	0	0			0	0	0			0	0	10			0	0	0		
RTOR Vol:	10	551	0			0	613	20			81	0	10			0	0	0		
PCE Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
MLF Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
FinalVolume:	10	551	0			0	613	20			81	0	10			0	0	0		
Saturation Flow Module:																				
Sat/Lane:	1720	1720	1720			1720	1720	1720			1720	1720	1720			1720	1720	1720		
Adjustment:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
Lanes:	1.00	2.00	0.00			0.00	1.94	0.06			1.00	0.00	1.00			0.00	0.00	0.00		
Final Sat.:	1720	3440	0			0	3331	109			1720	0	1720			0	0	0		
Capacity Analysis Module:																				
Vol/Sat:	0.01	0.16	0.00			0.00	0.18	0.18			0.05	0.00	0.01			0.00	0.00	0.00		
Crit Volume:		10						317			81						0			
Crit Moves:		****						****			****									

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Antioch Aviano Adult Community TIA
Near Term PM

Impact Analysis Report
Level Of Service

Intersection	Base Del/ LOS Veh	V/ C	Future Del/ LOS Veh	V/ C	Change in
# 1 Lone Tree Way/Deer Valley Rd	A xxxx	0.573	C xxxx	0.770	+ 0.197 V/C
# 2 Deer Valley Road/Marita Drive	A xxxx	0.270	A xxxx	0.343	+ 0.073 V/C
# 3 Deer Valley Road/Prewitt Ranch	A xxxx	0.384	A xxxx	0.469	+ 0.085 V/C
# 4 Deer Valley Road/Wellness Way	A xxxx	0.258	A xxxx	0.336	+ 0.078 V/C
# 5 Deer Valley Road/Kaiser	A xxxx	0.271	A xxxx	0.352	+ 0.081 V/C
# 6 Deer Valley Road/Sand Creek Ro	A xxxx	0.310	A xxxx	0.366	+ 0.056 V/C
# 7 Kaiser/Sand Creek Road	xxxx	0.000	A xxxx	0.021	+ 0.021 V/C
# 8 PARK/Sand Creek Road	xxxx	0.000	A xxxx	0.048	+ 0.048 V/C
# 9 Edgewood South Access/Sand Cre	xxxx	0.000	A xxxx	0.022	+ 0.022 V/C
# 10 Hillcrest Avenue/Sand Creek Ro	xxxx	0.000	A xxxx	0.049	+ 0.049 V/C
# 11 Hillcrest Avenue/East Edgewood	xxxx	0.000	A xxxx	0.025	+ 0.025 V/C
# 12 Hillcrest Ave/Prewett Ranch Dr	A xxxx	0.163	A xxxx	0.175	+ 0.012 V/C
# 13 Hillcrest Avenue/Vista Grande	A xxxx	0.109	A xxxx	0.145	+ 0.035 V/C
# 14 Lone Tree Way/Hillcrest Avenue	A xxxx	0.575	C xxxx	0.732	+ 0.157 V/C
# 15 Lone Tree Way/Vista Grande Dri	A xxxx	0.482	B xxxx	0.605	+ 0.123 V/C
# 16 Lone Tree Way/Heidorn Ranch Ro	A xxxx	0.389	A xxxx	0.497	+ 0.108 V/C
# 17 Lone Tree Way/Canada Valley Ro	B xxxx	0.674	D xxxx	0.840	+ 0.165 V/C
# 18 Lone Tree Way/SB SR-4 Bypass	A xxxx	0.411	A xxxx	0.551	+ 0.140 V/C
# 19 Lone Tree Way/NB SR-4 Bypass (	A xxxx	0.582	B xxxx	0.689	+ 0.107 V/C
# 20 Heidorn Ranch Road/Sand Creek	xxxx	0.000	xxxx	0.000	+ 0.000 V/C
# 21 SR-4 Bypass SB Ramps/Sand Cree	A xxxx	0.200	A xxxx	0.244	+ 0.044 V/C
# 22 SR-4 Bypass NB Ramps/Sand Cree	A xxxx	0.298	A xxxx	0.362	+ 0.064 V/C
# 23 Mammoth/Deer Valley	A xxxx	0.173	A xxxx	0.242	+ 0.069 V/C

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Antioch Aviano Adult Community TIA
Near Term PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #1 Lone Tree Way/Deer Valley Rd

Cycle (sec): 130 Critical Vol./Cap.(X): 0.770
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 106 Level Of Service: C

Street Name:	Deer Valley Road						Lone Tree Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	15	32	0	15	32	0	15	32	0	15	32	0
Lanes:	2	0 2	0 1	2	0 1	1 0	1	0 2	0 1	1	0 2	0 1
Volume Module:												
Base Vol:	221	306	115	230	302	22	122	1003	182	160	802	210
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	221	306	115	230	302	22	122	1003	182	160	802	210
Added Vol:	74	50	128	82	44	0	0	328	74	99	247	86
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	295	356	243	312	346	22	122	1331	256	259	1049	296
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	295	356	243	312	346	22	122	1331	256	259	1049	296
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	295	356	243	312	346	22	122	1331	256	259	1049	296
RTOR Reduct:	0	0	243	0	0	0	0	0	162	0	0	172
RTOR Vol:	295	356	0	312	346	22	122	1331	94	259	1049	124
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	295	356	0	312	346	22	122	1331	94	259	1049	124
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	2.00	1.00	2.00	1.88	0.12	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	3000	3300	1650	3000	3103	197	1650	3300	1650	1650	3300	1650
Capacity Analysis Module:												
Vol/Sat:	0.10	0.11	0.00	0.10	0.11	0.11	0.07	0.40	0.06	0.16	0.32	0.08
Crit Volume:	148				184			666		259		
Crit Moves:	****				****			****		****		

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Antioch Aviano Adult Community TIA
Near Term PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #2 Deer Valley Road/Marita Drive

Cycle (sec): 100 Critical Vol./Cap.(X): 0.343
Loss Time (sec): 3 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 16 Level Of Service: A

Street Name:	Deer Valley Road						Marita Drive					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 1	1 0	1	0 1	1 0	1	0 0	1 0	1	0 1	1 0
Volume Module:												
Base Vol:	14	577	5	32	587	21	11	0	5	36	4	126
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	14	577	5	32	587	21	11	0	5	36	4	126
Added Vol:	0	252	0	0	216	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	14	829	5	32	803	21	11	0	5	36	4	126
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	14	829	5	32	803	21	11	0	5	36	4	126
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	14	829	5	32	803	21	11	0	5	36	4	126
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Vol:	14	829	5	32	803	21	11	0	5	36	4	126
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	14	829	5	32	803	21	11	0	5	36	4	126
Saturation Flow Module:												
Sat/Lane:	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.99	0.01	1.00	1.95	0.05	1.00	0.00	1.00	1.00	0.03	0.97
Final Sat.:	1720	3419	21	1720	3352	88	1720	0	1720	1720	53	1667
Capacity Analysis Module:												
Vol/Sat:	0.01	0.24	0.24	0.02	0.24	0.24	0.01	0.00	0.00	0.02	0.08	0.08
Crit Volume:			417	32			11					130
Crit Moves:			****	****			****					****

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Antioch Aviano Adult Community TIA
Near Term PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #3 Deer Valley Road/Prewitt Ranch Drive

Cycle (sec): 100 Critical Vol./Cap.(X): 0.469
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 43 Level Of Service: A

Street Name:	Deer Valley Road						Prewitt Ranch Drive					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 1	1 0	1	0 1	1 0	1	0 0	1 0	1	0 1	1 0
Volume Module:												
Base Vol:	89	414	57	139	392	88	74	97	42	18	99	86
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	89	414	57	139	392	88	74	97	42	18	99	86
Added Vol:	0	238	0	8	195	13	10	0	0	0	0	4
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	89	652	57	147	587	101	84	97	42	18	99	90
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	89	652	57	147	587	101	84	97	42	18	99	90
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	89	652	57	147	587	101	84	97	42	18	99	90
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Vol:	89	652	57	147	587	101	84	97	42	18	99	90
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	89	652	57	147	587	101	84	97	42	18	99	90
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.84	0.16	1.00	1.71	0.29	1.00	0.70	0.30	1.00	0.52	0.48
Final Sat.:	1650	3035	265	1650	2816	484	1650	1151	499	1650	864	786
Capacity Analysis Module:												
Vol/Sat:	0.05	0.21	0.21	0.09	0.21	0.21	0.05	0.08	0.08	0.01	0.11	0.11
Crit Volume:			355	147			84			189		
Crit Moves:			****	****			****			****		

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Antioch Aviano Adult Community TIA
Near Term PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #4 Deer Valley Road/Wellness Way

Cycle (sec): 100 Critical Vol./Cap.(X): 0.336
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 28 Level Of Service: A

Street Name:	Deer Valley Road								Wellness Way							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Permitted					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0		
Lanes:	1	0	2	0	1	1	0	1	0	0	0	0	0	0	0	1	0	0	0	1
Volume Module:																				
Base Vol:	0	606	0	0	425	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	606	0	0	425	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Added Vol:	0	197	5	69	126	0	0	0	0	0	3	0	41	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	803	5	69	551	0	0	0	0	0	3	0	41	0	0	0	0	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	803	5	69	551	0	0	0	0	0	3	0	41	0	0	0	0	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	803	5	69	551	0	0	0	0	0	3	0	41	0	0	0	0	0	0	0
RTOR Reduct:	0	0	3	0	0	0	0	0	0	0	0	0	41	0	0	0	0	0	0	0
RTOR Vol:	0	803	2	69	551	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	803	2	69	551	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0
Saturation Flow Module:																				
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00
Final Sat.:	1650	3300	1650	1650	1650	0	0	0	0	0	1650	0	1650	0	0	1650	0	1650	0	1650
Capacity Analysis Module:																				
Vol/Sat:	0.00	0.24	0.00	0.04	0.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Crit Volume:	0				551				0			3								
Crit Moves:	****				****							****								

Antioch Aviano Adult Community TIA
Near Term PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #5 Deer Valley Road/Kaiser

Cycle (sec): 100 Critical Vol./Cap.(X): 0.352
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 38 Level Of Service: A

Street Name:	Deer Valley Road								Kaiser							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Permitted					Protected					Permitted					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0		
Lanes:	0	0	2	0	1	1	0	1	0	0	0	0	0	0	0	1	0	0	0	1
Volume Module:																				
Base Vol:	0	496	15	44	381	0	0	0	0	0	47	0	110							
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00							
Initial Bse:	0	496	15	44	381	0	0	0	0	0	47	0	110							
Added Vol:	0	24	17	87	42	0	0	0	0	0	35	0	178							
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0	0							
Initial Fut:	0	520	32	131	423	0	0	0	0	0	82	0	288							
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00							
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00							
PHF Volume:	0	520	32	131	423	0	0	0	0	0	82	0	288							
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	0							
Reduced Vol:	0	520	32	131	423	0	0	0	0	0	82	0	288							
RTOR Reduct:	0	0	32	0	0	0	0	0	0	0	0	0	131							
RTOR Vol:	0	520	0	131	423	0	0	0	0	0	82	0	157							
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00							
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00							
FinalVolume:	0	520	0	131	423	0	0	0	0	0	82	0	157							
Saturation Flow Module:																				
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650							
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00							
Lanes:	0.00	2.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00							
Final Sat.:	0	3300	1650	1650	1650	0	0	0	0	0	1650	0	1650							
Capacity Analysis Module:																				
Vol/Sat:	0.00	0.16	0.00	0.08	0.26	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.10							
Crit Volume:		260			423				0				157							
Crit Moves:					****								****							

Antioch Aviano Adult Community TIA
Near Term PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #6 Deer Valley Road/Sand Creek Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.366
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 29 Level Of Service: A

Street Name:	Deer Valley Road								Sand Creek Road							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Permitted				
Rights:	Include					Include					Include					Include				
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0		
Lanes:	1	0	0	1	0	1	0	0	1	0	1	0	0	1	0	0	1	0	0	1
Volume Module:																				
Base Vol:	0	511	0	0	428	0	0	0	0	0	0	0	0							
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00							
Initial Bse:	0	511	0	0	428	0	0	0	0	0	0	0	0							
Added Vol:	0	40	17	0	76	1	1	0	0	35	0	0	0							
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0	0							
Initial Fut:	0	551	17	0	504	1	1	0	0	35	0	0	0							
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00							
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00							
PHF Volume:	0	551	17	0	504	1	1	0	0	35	0	0	0							
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	0							
Reduced Vol:	0	551	17	0	504	1	1	0	0	35	0	0	0							
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0	0							
RTOR Vol:	0	551	17	0	504	1	1	0	0	35	0	0	0							
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00							
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00							
FinalVolume:	0	551	17	0	504	1	1	0	0	35	0	0	0							
Saturation Flow Module:																				
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650							
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00							
Lanes:	1.00	0.97	0.03	1.00	0.99	0.01	1.00	1.00	0.00	1.00	0.00	1.00	1.00							
Final Sat.:	1650	1601	49	1650	1647	3	1650	1650	0	1650	0	1650	1650							
Capacity Analysis Module:																				
Vol/Sat:	0.00	0.34	0.34	0.00	0.31	0.31	0.00	0.00	0.00	0.02	0.00	0.00								
Crit Volume:			568	0			1			35										
Crit Moves:			****	****			****			****										

Antioch Aviano Adult Community TIA
Near Term PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #7 Kaiser/Sand Creek Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.021
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 19 Level Of Service: A

Street Name:	Kaiser								Sand Creek Road							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Permitted					Protected					Protected					Permitted				
Rights:	Include					Include					Include					Include				
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0		
Lanes:	0	0	0	0	0	1	0	0	0	1	1	0	2	0	0	0	0	2	0	1
Volume Module:																				
Base Vol:	0	0	0	0	0	0	0	0	0	0	0	0	0							
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00							
Initial Bse:	0	0	0	0	0	0	0	0	0	0	0	0	0							
Added Vol:	0	0	0	0	0	35	17	0	0	0	0	0	0							
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0	0							
Initial Fut:	0	0	0	0	0	35	17	0	0	0	0	0	0							
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00							
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00							
PHF Volume:	0	0	0	0	0	35	17	0	0	0	0	0	0							
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	0							
Reduced Vol:	0	0	0	0	0	35	17	0	0	0	0	0	0							
RTOR Reduct:	0	0	0	0	0	17	0	0	0	0	0	0	0							
RTOR Vol:	0	0	0	0	0	18	17	0	0	0	0	0	0							
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00							
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00							
FinalVolume:	0	0	0	0	0	18	17	0	0	0	0	0	0							
Saturation Flow Module:																				
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650							
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00							
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	2.00	0.00	2.00							
Final Sat.:	0	0	0	1650	0	1650	1650	3300	0	0	3300	1650								
Capacity Analysis Module:																				
Vol/Sat:	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00								
Crit Volume:		0				18	17				0									
Crit Moves:						****	****													

Antioch Aviano Adult Community TIA
Near Term PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #8 PARK/Sand Creek Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.048
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 20 Level Of Service: A

Street Name:	PARK				Sand Creek Road							
Approach:	North Bound				South Bound				East Bound			
Movement:	L	T	R		L	T	R		L	T	R	
Control:	Permitted				Protected				Protected			
Rights:	Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0	
Lanes:	0	0	0	0	0	1	0	0	0	1	1	0

Street Name:	PARK				Sand Creek Road							
Approach:	North Bound				South Bound				East Bound			
Movement:	L	T	R		L	T	R		L	T	R	
Control:	Permitted				Protected				Protected			
Rights:	Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0	
Lanes:	2	0	0	0	0	1	0	0	0	1	1	0

Street Name:	PARK				Sand Creek Road							
Approach:	North Bound				South Bound				East Bound			
Movement:	L	T	R		L	T	R		L	T	R	
Control:	Permitted				Protected				Protected			
Rights:	Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0	
Lanes:	2	0	0	0	0	1	0	0	0	1	1	0

Street Name:	PARK				Sand Creek Road							
Approach:	North Bound				South Bound				East Bound			
Movement:	L	T	R		L	T	R		L	T	R	
Control:	Permitted				Protected				Protected			
Rights:	Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0	
Lanes:	2	0	0	0	0	1	0	0	0	1	1	0

Volume Module:												
Base Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	0	0	0	0	0
Added Vol:	0	0	0	80	0	0	0	0	0	0	0	80
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	80	0	0	0	0	0	0	0	80
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	80	0	0	0	0	0	0	0	80
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	80	0	0	0	0	0	0	0	80
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	80
RTOR Vol:	0	0	0	80	0	0	0	0	0	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	80	0	0	0	0	0	0	0	0

Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	2.00	0.00	0.00	2.00	1.00
Final Sat.:	0	0	0	1650	0	1650	1650	3300	0	0	3300	1650

Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Crit Volume:		0		80				0			0	
Crit Moves:				****								

Antioch Aviano Adult Community TIA
Near Term PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #9 Edgewood South Access/Sand Creek Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.022
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 23 Level Of Service: A

Street Name:	Edgewood South Access				Sand Creek Road							
Approach:	North Bound				South Bound				East Bound			
Movement:	L	T	R		L	T	R		L	T	R	
Control:	Protected				Protected				Protected			
Rights:	Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0	
Lanes:	0	0	0	0	0	1	0	0	0	1	1	0

Street Name:	Edgewood South Access				Sand Creek Road							
Approach:	North Bound				South Bound				East Bound			
Movement:	L	T	R		L	T	R		L	T	R	
Control:	Protected				Protected				Protected			
Rights:	Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0	
Lanes:	0	0	0	0	0	1	0	0	0	1	1	0

Street Name:	Edgewood South Access				Sand Creek Road							
Approach:	North Bound				South Bound				East Bound			
Movement:	L	T	R		L	T	R		L	T	R	
Control:	Protected				Protected				Protected			
Rights:	Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0	
Lanes:	0	0	0	0	0	1	0	0	0	1	1	0

Street Name:	Edgewood South Access				Sand Creek Road							
Approach:	North Bound				South Bound				East Bound			
Movement:	L	T	R		L	T	R		L	T	R	
Control:	Protected				Protected				Protected			
Rights:	Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0	
Lanes:	0	0	0	0	0	1	0	0	0	1	1	0

Volume Module:												
Base Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	0	0	0	0	0
Added Vol:	0	0	0	0	0	0	0	80	0	0	80	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	0	0	0	0	80	0	0	80	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	0	0	0	0	80	0	0	80	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	0	0	0	0	80	0	0	80	0
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Vol:	0	0	0	0	0	0	0	80	0	0	80	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	0	0	0	0	80	0	0	80	0

Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	2.00	0.00	0.00	2.00	1.00
Final Sat.:	0	0	0	1800	0	1800	1800	3600	0	0	3600	1800

Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.02	0.00
Crit Volume:	0				0			0			40	
Crit Moves:							****				****	

Antioch Aviano Adult Community TIA
Near Term PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #10 Hillcrest Avenue/Sand Creek Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.049
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 20 Level Of Service: A

Street Name:	Hillcrest Avenue				Sand Creek Road							
Approach:	North Bound				South Bound				East Bound			
Movement:	L	T	R		L	T	R		L	T	R	
Control:	Permitted				Protected				Protected			
Rights:	Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0	
Lanes:	0	0	0	0	0	1	0	0	0	1	1	0

Street Name:	Hillcrest Avenue				Sand Creek Road							
Approach:	North Bound				South Bound				East Bound			
Movement:	L	T	R		L	T	R		L	T	R	
Control:	Permitted				Protected				Protected			
Rights:	Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0	
Lanes:	0	0	0	0	0	1	0	0	0	1	1	0

Street Name:	Hillcrest Avenue				Sand Creek Road							
Approach:	North Bound				South Bound				East Bound			
Movement:	L	T	R		L	T	R		L	T	R	
Control:	Permitted				Protected				Protected			
Rights:	Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0	
Lanes:	0	0	0	0	0	1	0	0	0	1	1	0

Street Name:	Hillcrest Avenue				Sand Creek Road							
Approach:	North Bound				South Bound				East Bound			
Movement:	L	T	R		L	T	R		L	T	R	
Control:	Permitted				Protected				Protected			
Rights:	Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0	
Lanes:	0	0	0	0	0	1	0	0	0	1	1	0

Volume Module:												
Base Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	0	0	0	0	0
Added Vol:	0	0	0	1	0	80	80	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	1	0	80	80	0	0	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	1	0	80	80	0	0	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	1	0	80	80	0	0	0	0	0
RTOR Reduct:	0	0	0	0	0	80	0	0	0	0	0	0
RTOR Vol:	0	0	0	1	0	0	80	0	0	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	1	0	0	80	0	0	0	0	0

Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	2.00	0.00	0.00	2.00	1.00
Final Sat.:	0	0	0	1650	0	1650	1650	3300	0	0	3300	1650

Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00
Crit Volume:		0		1			80				0	
Crit Moves:				****			****					

Antioch Aviano Adult Community TIA
Near Term PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #11 Hillcrest Avenue/East Edgewood Access

Cycle (sec): 100 Critical Vol./Cap.(X): 0.025
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 19 Level Of Service: A

Street Name:	Hillcrest Avenue				East Edgewood Access							
Approach:	North Bound				South Bound				East Bound			
Movement:	L	T	R		L	T	R		L	T	R	
Control:	Protected				Permitted				Protected			
Rights:	Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0	
Lanes:	1	0	2	0	0	0	0	1	1	0	1	0

Street Name:	Hillcrest Avenue				East Edgewood Access							
Approach:	North Bound				South Bound				East Bound			
Movement:	L	T	R		L	T	R		L	T	R	
Control:	Protected				Permitted				Protected			
Rights:	Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0	
Lanes:	1	0	2	0	0	0	0	1	1	0	1	0

Street Name:	Hillcrest Avenue				East Edgewood Access							
Approach:	North Bound				South Bound				East Bound			
Movement:	L	T	R		L	T	R		L	T	R	
Control:	Protected				Permitted				Protected			
Rights:	Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0	
Lanes:	1	0	2	0	0	0	0	1	1	0	1	0

Street Name:	Hillcrest Avenue				East Edgewood Access							
Approach:	North Bound				South Bound				East Bound			
Movement:	L	T	R		L	T	R		L	T	R	
Control:	Protected				Permitted				Protected			
Rights:	Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0	
Lanes:	1	0	2	0	0	0	0	1	1	0	1	0

Volume Module:												
Base Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	0	0	0	0	0
Added Vol:	0	80	0	0	81	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	80	0	0	81	0	0	0	0	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	80	0	0	81	0	0	0	0	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	80	0	0	81	0	0	0	0	0	0	0
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Vol:	0	80	0	0	81	0	0	0	0	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	80	0	0	81	0	0	0	0	0	0	0

Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	0.00	0.00	2.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	1650	3300	0	0	3300	0	1650	0	1650	0	0	0

Capacity Analysis Module:												
Vol/Sat:	0.00	0.02	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Crit Volume:	0				41			0			0	
Crit Moves:	****				****							

Antioch Aviano Adult Community TIA
Near Term PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #12 Hillcrest Ave/Prewett Ranch Dr

Cycle (sec): 100 Critical Vol./Cap.(X): 0.175
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 28 Level Of Service: A

Street Name:	Hillcrest Ave						Prewett Dr					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 1	1 0	1	0 1	1 0	1	0 0	1 0	1	0 0	1 0
Volume Module:												
Base Vol:	0	0	0	22	0	134	124	24	0	0	11	11
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	22	0	134	124	24	0	0	11	11
Added Vol:	2	102	0	0	125	5	2	0	2	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	2	102	0	22	125	139	126	24	2	0	11	11
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	2	102	0	22	125	139	126	24	2	0	11	11
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	2	102	0	22	125	139	126	24	2	0	11	11
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Vol:	2	102	0	22	125	139	126	24	2	0	11	11
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	2	102	0	22	125	139	126	24	2	0	11	11
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	0.00	1.00	1.00	1.00	1.00	0.92	0.08	1.00	0.50	0.50
Final Sat.:	1650	3300	0	1650	1650	1650	1650	1523	127	1650	825	825
Capacity Analysis Module:												
Vol/Sat:	0.00	0.03	0.00	0.01	0.08	0.08	0.08	0.02	0.02	0.00	0.01	0.01
Crit Volume:	2					139	126				22	
Crit Moves:	****					****	****				****	

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Antioch Aviano Adult Community TIA
Near Term PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #13 Hillcrest Avenue/Vista Grande Drive

Cycle (sec): 100 Critical Vol./Cap.(X): 0.145
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 22 Level Of Service: A

Street Name:	Hillcrest Avenue						Vista Grande Drive					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Protected			Permitted			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0 1	1 0	1	0 2	0 0	0	0 0	0 0	1	0 0	0 1
Volume Module:												
Base Vol:	0	80	61	60	100	0	0	0	0	50	0	29
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	80	61	60	100	0	0	0	0	50	0	29
Added Vol:	0	103	2	4	129	0	0	0	0	2	0	1
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	183	63	64	229	0	0	0	0	52	0	30
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	183	63	64	229	0	0	0	0	52	0	30
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	183	63	64	229	0	0	0	0	52	0	30
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	30
RTOR Vol:	0	183	63	64	229	0	0	0	0	52	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	183	63	64	229	0	0	0	0	52	0	0
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	1.49	0.51	1.00	2.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Final Sat.:	0	2455	845	1650	3300	0	0	0	0	1650	0	1650
Capacity Analysis Module:												
Vol/Sat:	0.00	0.07	0.07	0.04	0.07	0.00	0.00	0.00	0.00	0.03	0.00	0.00
Crit Volume:			123	64					0		52	
Crit Moves:			****	****							****	

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Antioch Aviano Adult Community TIA
Near Term PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #14 Lone Tree Way/Hillcrest Avenue

Cycle (sec): 130 Critical Vol./Cap.(X): 0.732
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 85 Level Of Service: C

Street Name:	Hillcrest Avenue						Lone Tree Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 1	1 0	2	0 2	0 1	1	0 2	1 0	1	0 3	0 1
Volume Module:												
Base Vol:	39	53	20	788	96	75	169	1060	18	49	927	606
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	39	53	20	788	96	75	169	1060	18	49	927	606
Added Vol:	72	14	18	60	21	50	113	366	91	20	293	57
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	111	67	38	848	117	125	282	1426	109	69	1220	663
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	111	67	38	848	117	125	282	1426	109	69	1220	663
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	111	67	38	848	117	125	282	1426	109	69	1220	663
RTOR Reduct:	0	0	0	0	0	125	0	0	0	0	0	466
RTOR Vol:	111	67	38	848	117	0	282	1426	109	69	1220	197
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	111	67	38	848	117	0	282	1426	109	69	1220	197
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.28	0.72	2.00	2.00	1.00	1.00	2.79	0.21	1.00	3.00	1.00
Final Sat.:	1650	2106	1194	3000	3300	1650	1650	4599	351	1650	4950	1650
Capacity Analysis Module:												
Vol/Sat:	0.07	0.03	0.03	0.28	0.04	0.00	0.17	0.31	0.31	0.04	0.25	0.12
Crit Volume:			53	424			282				407	
Crit Moves:			****	****			****				****	

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Antioch Aviano Adult Community TIA
Near Term PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #15 Lone Tree Way/Vista Grande Drive

Cycle (sec): 130 Critical Vol./Cap.(X): 0.605
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 47 Level Of Service: B

Street Name:	Vista Grande Drive						Lone Tree Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 0	1 0	1	0 0	1 0	1	0 2	1 0	1	0 2	1 0
Volume Module:												
Base Vol:	41	27	113	23	10	31	41	1626	60	104	1483	37
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	41	27	113	23	10	31	41	1626	60	104	1483	37
Added Vol:	10	0	17	17	0	4	5	449	17	23	300	18
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	51	27	130	40	10	35	46	2075	77	127	1783	55
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	51	27	130	40	10	35	46	2075	77	127	1783	55
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	51	27	130	40	10	35	46	2075	77	127	1783	55
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Vol:	51	27	130	40	10	35	46	2075	77	127	1783	55
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	51	27	130	40	10	35	46	2075	77	127	1783	55
Saturation Flow Module:												
Sat/Lane:	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.17	0.83	1.00	0.22	0.78	1.00	2.89	0.11	1.00	2.91	0.09
Final Sat.:	1720	296	1424	1720	382	1338	1720	4975	185	1720	5006	154
Capacity Analysis Module:												
Vol/Sat:	0.03	0.09	0.09	0.02	0.03	0.03	0.03	0.42	0.42	0.07	0.36	0.36
Crit Volume:			157	40					717	127		
Crit Moves:			****	****					****	****		

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Antioch Aviano Adult Community TIA
Near Term PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #16 Lone Tree Way/Heidorn Ranch Road

Cycle (sec): 120 Critical Vol./Cap.(X): 0.497
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 45 Level Of Service: A

Street Name:	Heidorn Ranch Road								Lone Tree Way							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Split Phase					Split Phase					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0		
Lanes:	2	0	1	0	1	1	0	0	1	0	1	0	2	1	0	1	0	2	1	1
Volume Module:																				
Base Vol:	79	1	11		7	0	0		3	1679	43		18	1519		7				
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00				
Initial Bse:	79	1	11		7	0	0		3	1679	43		18	1519		7				
Added Vol:	5	0	12		2	0	0		0	474	9		12	336		1				
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0		0				
Initial Fut:	84	1	23		9	0	0		3	2153	52		30	1855		8				
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00				
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00				
PHF Volume:	84	1	23		9	0	0		3	2153	52		30	1855		8				
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0		0				
Reduced Vol:	84	1	23		9	0	0		3	2153	52		30	1855		8				
RTOR Reduct:	0	0	23		0	0	0		0	0	0		0	0		8				
RTOR Vol:	84	1	0		9	0	0		3	2153	52		30	1855		0				
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00				
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00				
FinalVolume:	84	1	0		9	0	0		3	2153	52		30	1855		0				
Saturation Flow Module:																				
Sat/Lane:	1650	1650	1650		1650	1650	1650		1650	1650	1650		1650	1650		1650				
Adjustment:	0.91	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		0.91				
Lanes:	2.00	1.00	1.00		1.00	1.00	0.00		1.00	2.93	0.07		1.00	3.00		1.00				
Final Sat.:	3000	1650	1650		1650	1650	0		1650	4833	117		1650	4950		1500				
Capacity Analysis Module:																				
Vol/Sat:	0.03	0.00	0.00		0.01	0.00	0.00		0.00	0.45	0.45		0.02	0.37		0.00				
Crit Volume:	42				9						735		30							
Crit Moves:	****				****						****		****							

Antioch Aviano Adult Community TIA
Near Term PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #17 Lone Tree Way/Canada Valley Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.840
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 142 Level Of Service: D

Street Name:	Canada Valley Road								Lone Tree Way							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0		
Lanes:	2	0	0	1	1	1	0	1	0	1	1	0	3	0	1	2	0	3	0	1
Volume Module:																				
Base Vol:	112	61	196		346	66	54		67	1551	93		343	1332		183				
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00				
Initial Bse:	112	61	196		346	66	54		67	1551	93		343	1332		183				
Added Vol:	9	20	13		124	12	67		122	368	7		11	281		193				
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0		0				
Initial Fut:	121	81	209		470	78	121		189	1919	100		354	1613		376				
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00				
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00				
PHF Volume:	121	81	209		470	78	121		189	1919	100		354	1613		376				
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0		0				
Reduced Vol:	121	81	209		470	78	121		189	1919	100		354	1613		376				
RTOR Reduct:	0	0	195		0	0	121		0	0	67		0	0		376				
RTOR Vol:	121	81	14		470	78	0		189	1919	33		354	1613		0				
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00				
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00				
FinalVolume:	121	81	14		470	78	0		189	1919	33		354	1613		0				
Saturation Flow Module:																				
Sat/Lane:	1650	1650	1650		1650	1650	1650		1650	1650	1650		1650	1650		1650				
Adjustment:	0.91	1.00	0.91		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		0.91				
Lanes:	2.00	1.00	1.00		1.00	1.00	1.00		1.00	3.00	1.00		2.00	3.00		1.00				
Final Sat.:	3000	1650	1650		1650	1650	1650		4950	1650	3000		4950	1650						
Capacity Analysis Module:																				
Vol/Sat:	0.04	0.05	0.01		0.28	0.05	0.00		0.11	0.39	0.02		0.12	0.33		0.00				
Crit Volume:		81			470					640			177							
Crit Moves:		****			****					****			****							

Antioch Aviano Adult Community TIA
Near Term PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #18 Lone Tree Way/SB SR-4 Bypass

Cycle (sec): 100 Critical Vol./Cap.(X): 0.551
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 119 Level Of Service: A

Street Name:	SB SR-4 Bypass								Lone Tree Way							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Permitted					Protected					Permitted					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0		
Lanes:	0	0	0	0	0	1	1	0	0	1	0	0	3	0	1	2	0	3	0	0
Volume Module:																				
Base Vol:	0	0	0		0	0	0		0	1057	927		194	2033		0				
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00				
Initial Bse:	0	0	0		0	0	0		0	1057	927		194	2033		0				
Added Vol:	0	0	0		111	0	104		0	391	115		79	382		0				
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0		0				
Initial Fut:	0	0	0		111	0	104		0	1448	1042		273	2415		0				
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00				
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00				
PHF Volume:	0	0	0		111	0	104		0	1448	1042		273	2415		0				
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0		0				
Reduced Vol:	0	0	0		111	0	104		0	1448	1042		273	2415		0				
RTOR Reduct:	0	0	0		0	0	0		0	0	0		0	0		0				
RTOR Vol:	0	0	0		111	0	104		0	1448	1042		273	2415		0				
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00				
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00				
FinalVolume:	0	0	0		111	0	104		0	1448	1042		273	2415		0				
Saturation Flow Module:																				
Sat/Lane:	1650	1650	1650		1650	1650	1650		1650	1650	1650		1650	1650		1650				
Adjustment:	1.00	1.00	1.00		0.91	1.00	1.00		1.00	1.00	1.00		0.91	1.00		1.00				
Lanes:	0.00	0.00	0.00		2.00	0.00	1.00		0.00	3.00	1.00		2.00	3.00		0.00				
Final Sat.:	0	0	0		3000	0	1650		0	4950	1650		3000	4950		0				
Capacity Analysis Module:																				
Vol/Sat:	0.00	0.00	0.00		0.04	0.00	0.06		0.00	0.29	0.63		0.09	0.49		0.00				
Crit Volume:		0					104			483				805						
Crit Moves:							****							****						

Antioch Aviano Adult Community TIA
Near Term PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #19 Lone Tree Way/NB SR-4 Bypass (Jeffrey Way)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.689
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 180 Level Of Service: B

Street Name:	NB SR-4 Bypass (Jeffrey Way)								Lone Tree Way							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Permitted					Permitted					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0		
Lanes:	1	1	0	0	1	0	0	0	0	0	0	0	3	0	1	1	0	3	0	1
Volume Module:																				
Base Vol:	1008	0	240		0	0	0		0	1055	2		20	1217		0				
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00				
Initial Bse:	1008	0	240		0	0	0		0	1055	2		20	1217		0				
Added Vol:	109	0	76		0	0	0		0	421	81		4	352		114				
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0		0				
Initial Fut:	1117	0	316		0	0	0		0	1476	83		24	1569		114				
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00				
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00				
PHF Volume:	1117	0	316		0	0	0		0	1476	83		24	1569		114				
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0		0				
Reduced Vol:	1117	0	316		0	0	0		0	1476	83		24	1569		114				
RTOR Reduct:	0	0	24		0	0	0		0	0	83		0	0		0				
RTOR Vol:	1117	0	292		0	0	0		0	1476	0		24	1569		114				
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00				
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00				
FinalVolume:	1117	0	292		0	0	0		0	1476	0		24	1569		114				
Saturation Flow Module:																				
Sat/Lane:	1650	1650	1650		1650	1650	1650		1650	1650	1650		1650	1650		1650				
Adjustment:	0.91	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00				
Lanes:	2.00	0.00	1.00		0.00	0.00	0.00		0.00	3.00	1.00		1.00	3.00		1.00				
Final Sat.:	3000	0	1650		0	0	0		0	4950	1650		1650	4950		1650				
Capacity Analysis Module:																				
Vol/Sat:	0.37	0.00	0.18		0.00	0.00	0.00		0.00	0.30	0.00		0.01	0.32		0.07				
Crit Volume:	559						0			492				523						
Crit Moves:	****													****						

Antioch Aviano Adult Community TIA
Near Term PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #20 Heidorn Ranch Road/Sand Creek Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.000
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 0 Level Of Service: xxxxxx

Street Name:	Heidorn Ranch Road						Sand Creek Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0 1	0 0	0	1 0	0 0	0	0 1	0 0	0	0 0	0 1
Volume Module:												
Base Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	0	0	0	0	0
Added Vol:	0	1	0	14	2	0	0	1	0	0	0	13
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1	0	14	2	0	0	1	0	0	0	13
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1	0	14	2	0	0	1	0	0	0	13
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1	0	14	2	0	0	1	0	0	0	13
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	13
RTOR Vol:	0	1	0	14	2	0	0	1	0	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1	0	14	2	0	0	1	0	0	0	0
Saturation Flow Module:												
Sat/Lane:	0	0	0	0	0	0	0	0	0	0	0	0
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Final Sat.:	0	0	0	0	0	0	0	0	0	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Crit Volume:		0			0			0			0	
Crit Moves:												

Antioch Aviano Adult Community TIA
Near Term PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #21 SR-4 Bypass SB Ramps/Sand Creek Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.244
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 25 Level Of Service: A

Street Name:	SR-4 Bypass SB Ramps						Sand Creek Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Protected			Permitted			Protected		
Rights:	Include			Include			Include			Ignore		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0 0 0	0	1	0 1!	0 1	0	0 2	0 1	0	0 2	0 1
Volume Module:												
Base Vol:	0	0	0	599	0	0	0	0	0	0	0	121
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	599	0	0	0	0	0	0	0	121
Added Vol:	0	0	0	97	0	42	0	39	14	0	40	28
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	696	0	42	0	39	14	0	40	149
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	696	0	42	0	39	14	0	40	149
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	696	0	42	0	39	14	0	40	149
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Vol:	0	0	0	696	0	42	0	39	14	0	40	149
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	696	0	42	0	39	14	0	40	149
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	0.91	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	0.00	2.00	1.00	0.00	2.00	1.00
Final Sat.:	0	0	0	3000	0	1500	0	3300	1650	0	3300	1650
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.23	0.00	0.03	0.00	0.01	0.01	0.00	0.01	0.09
Crit Volume:		0		348				20			0	
Crit Moves:				****				****			****	

Antioch Aviano Adult Community TIA
Near Term PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #22 SR-4 Bypass NB Ramps/Sand Creek Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.362
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 29 Level Of Service: A

Street Name:	SR-4 Bypass NB Ramps						Sand Creek Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 1!	0 1	0	0 0 0	0 0	2	0 2	0 0	0	0 2	0 1
Volume Module:												
Base Vol:	0	0	222	0	0	0	0	599	0	0	121	390
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	222	0	0	0	0	599	0	0	121	390
Added Vol:	13	0	42	0	0	0	23	114	0	0	56	75
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	13	0	264	0	0	0	23	713	0	0	177	465
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	13	0	264	0	0	0	23	713	0	0	177	465
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	13	0	264	0	0	0	23	713	0	0	177	465
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Vol:	13	0	264	0	0	0	23	713	0	0	177	465
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	13	0	264	0	0	0	23	713	0	0	177	465
Saturation Flow Module:												
Sat/Lane:	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720
Adjustment:	0.91	1.00	0.91	1.00	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.00	2.00	0.00	0.00	0.00	2.00	2.00	0.00	0.00	2.00	1.00
Final Sat.:	1563	0	3127	0	0	0	3127	3440	0	0	3440	1720
Capacity Analysis Module:												
Vol/Sat:	0.01	0.00	0.08	0.00	0.00	0.00	0.01	0.21	0.00	0.00	0.05	0.27
Crit Volume:			132			0		12				465
Crit Moves:			****				****					****

Antioch Aviano Adult Community TIA
Near Term PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #23 Mammoth/Deer Valley

Cycle (sec): 100 Critical Vol./Cap.(X): 0.242
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 30 Level Of Service: A

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Lanes:	1	0 2	0	0	0	1	1	0	1	0	0	1	0	0	0	0
Volume Module:																
Base Vol:	38	553	0	0	451	25	21	0	9	0	0	0				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	38	553	0	0	451	25	21	0	9	0	0	0				
Added Vol:	0	238	0	0	195	0	0	0	0	0	0	0				
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0				
Initial Fut:	38	791	0	0	646	25	21	0	9	0	0	0				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	38	791	0	0	646	25	21	0	9	0	0	0				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	38	791	0	0	646	25	21	0	9	0	0	0				
RTOR Reduct:	0	0	0	0	0	0	0	0	9	0	0	0				
RTOR Vol:	38	791	0	0	646	25	21	0	0	0	0	0				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
FinalVolume:	38	791	0	0	646	25	21	0	0	0	0	0				
Saturation Flow Module:																
Sat/Lane:	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720				
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Lanes:	1.00	2.00	0.00	0.00	1.93	0.07	1.00	0.00	1.00	0.00	0.00	0.00				
Final Sat.:	1720	3440	0	0	3312	128	1720	0	1720	0	0	0				
Capacity Analysis Module:																
Vol/Sat:	0.02	0.23	0.00	0.00	0.20	0.20	0.01	0.00	0.00	0.00	0.00	0.00				
Crit Volume:		396		0			21				0					
Crit Moves:		****		****			****									

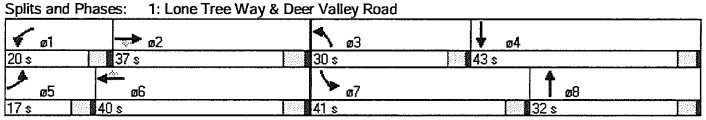
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	3433	3316	0	*2000	3518	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	3433	3316	0	1770	3518	0
Satd. Flow (RTOR)			55			64		128			3	
Volume (vph)	59	1185	229	283	1224	265	294	318	229	528	479	19
Lane Group Flow (vph)	69	1394	269	349	1511	327	342	636	0	812	766	0
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6						
Total Split (s)	17.0	37.0	37.0	20.0	40.0	40.0	30.0	32.0	0.0	41.0	43.0	0.0
Act Effct Green (s)	11.4	36.5	36.5	17.0	44.2	44.2	19.2	26.5		38.0	45.2	
Actuated g/C Ratio	0.09	0.28	0.28	0.13	0.34	0.34	0.15	0.20		0.29	0.35	
v/c Ratio	0.44	1.40	0.56	1.51	1.25	0.56	0.67	0.82		1.39	0.62	
Uniform Delay, d1	57.4	46.8	31.1	56.5	43.4	28.1	52.4	39.1		46.0	35.1	
Delay	55.8	179.0	32.6	205.0	144.5	19.6	45.3	54.4		176.1	35.9	
LOS	E	F	C	F	F	B	D	D		F	D	
Approach Delay		151.3			135.5			51.2			108.0	
Approach LOS		F			F			D			F	
Queue Length 50th (ft)	56	~844	156	~396	~892	206	100	258		~910	278	
Queue Length 95th (ft)	98	#917	233	#507	#925	226	120	307		#693	241	
Internal Link Dist (ft)		900			1588			664			709	
50th Up Block Time (%)										26%		
95th Up Block Time (%)										2%		
Turn Bay Length (ft)	195		75	195		75	180			150		
50th Bay Block Time %		62%	39%	68%	74%	18%		22%		63%	31%	
95th Bay Block Time %		64%	51%	89%	74%	27%		17%		58%	27%	
Queuing Penalty (veh)		43	314	590	258	170		65		232	232	

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 54 (42%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.51
Intersection Signal Delay: 120.3 Intersection LOS: F
Intersection Capacity Utilization 135.0% ICU Level of Service H

* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Lone Tree Way & Deer Valley Road



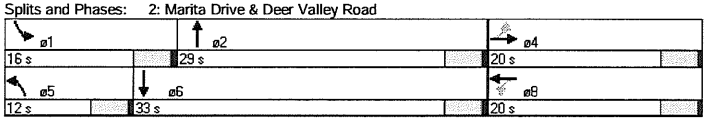
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	1676	0	1770	1598	0	1770	3518	0	1770	3532	0
Flt Permitted	0.746			0.736			0.950			0.950		
Satd. Flow (perm)	1390	1676	0	1371	1598	0	1770	3518	0	1770	3532	0
Satd. Flow (RTOR)		22			17			7			3	
Volume (vph)	18	10	20	12	1	15	65	854	33	195	810	13
Lane Group Flow (vph)	20	33	0	13	18	0	72	986	0	217	914	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Total Split (s)	20.0	20.0	0.0	20.0	20.0	0.0	12.0	29.0	0.0	16.0	33.0	0.0
Act Effct Green (s)	7.5	7.5		7.5	7.5		8.3	40.4		11.9	46.5	
Actuated g/C Ratio	0.12	0.12		0.12	0.12		0.13	0.62		0.18	0.72	
v/c Ratio	0.12	0.16		0.08	0.09		0.32	0.45		0.67	0.36	
Uniform Delay, d1	27.8	9.2		27.6	1.5		26.8	7.3		24.7	4.8	
Delay	25.4	14.8		25.2	13.3		32.6	7.3		28.5	6.0	
LOS	C	B		C	B		C	A		C	A	
Approach Delay		18.8			18.3			9.0			10.3	
Approach LOS		B			B			A			B	
Queue Length 50th (ft)	7	4		5	0		31	51		124	61	
Queue Length 95th (ft)	25	26		18	16		m57	m150		m179	m147	
Internal Link Dist (ft)		346			300			2263			664	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	40			100			175			125		
50th Bay Block Time %										4%	10%	
95th Bay Block Time %								8%		15%	8%	
Queuing Penalty (veh)								3		45	20	

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 16 (25%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.67
Intersection Signal Delay: 10.0 Intersection LOS: B
Intersection Capacity Utilization 52.7% ICU Level of Service A

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Marita Drive & Deer Valley Road

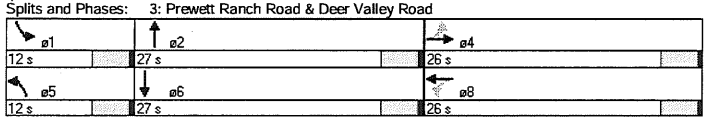


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	1794	0	1770	1736	0	1770	3472	0	1770	3437	0
Flt Permitted	0.239			0.439			0.950			0.950		
Satd. Flow (perm)	445	1794	0	818	1736	0	1770	3472	0	1770	3437	0
Satd. Flow (RTOR)		28			72			28			51	
Volume (vph)	125	205	67	41	230	193	37	524	76	140	580	139
Lane Group Flow (vph)	139	302	0	46	470	0	41	666	0	156	798	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Total Split (s)	26.0	26.0	0.0	26.0	26.0	0.0	12.0	27.0	0.0	12.0	27.0	0.0
Act Effct Green (s)	21.9	21.9		21.9	21.9		7.8	25.2		8.8	32.3	
Actuated g/C Ratio	0.34	0.34		0.34	0.34		0.12	0.39		0.14	0.50	
v/c Ratio	0.93	0.48		0.17	0.74		0.19	0.49		0.65	0.46	
Uniform Delay, d1	20.8	15.3		15.1	15.9		29.1	14.2		26.6	11.4	
Delay	57.6	15.4		15.0	17.0		37.6	6.5		20.6	15.8	
LOS	E	B		B	B		D	A		C	B	
Approach Delay		28.7			16.8			8.3			16.6	
Approach LOS		C			B			A			B	
Queue Length 50th (ft)	51	81		12	133		16	0		63	178	
Queue Length 95th (ft)	#149	145		34	#235		43	47		107	233	
Internal Link Dist (ft)		416			350			970			2263	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	155			80			140			140		
50th Bay Block Time %					30%						16%	
95th Bay Block Time %	6%	6%			45%						32%	
Queuing Penalty (veh)	8	4			17						38	

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 16 (25%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.93
Intersection Signal Delay: 16.5 Intersection LOS: B
Intersection Capacity Utilization 75.0% ICU Level of Service C
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Prewett Ranch Road & Deer Valley Road

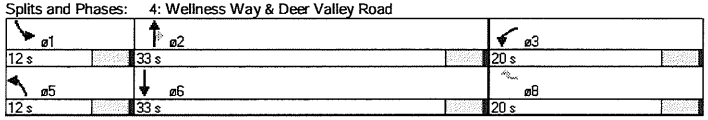


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	0	0	0	1770	0	1583	1863	3539	1583	1770	1863	0
Flt Permitted				0.950							0.950	
Satd. Flow (perm)	0	0	0	1770	0	1583	1863	3539	1583	1770	1863	0
Satd. Flow (RTOR)						67			2			
Volume (vph)	0	0	0	5	0	60	0	540	2	20	751	0
Lane Group Flow (vph)	0	0	0	6	0	67	0	600	2	22	834	0
Turn Type				Prot		custom	Prot		Perm	Prot		
Protected Phases				3			5	2		1	6	
Permitted Phases						8			2			
Total Split (s)	0.0	0.0	0.0	20.0	0.0	20.0	12.0	33.0	33.0	12.0	33.0	0.0
Act Effct Green (s)				7.3		7.3		52.1	52.1	7.4	56.7	
Actuated g/C Ratio				0.11		0.11		0.80	0.80	0.11	0.87	
v/c Ratio				0.03		0.28		0.21	0.00	0.11	0.51	
Uniform Delay, d1				27.7		0.0		3.0	0.0	29.0	1.7	
Delay				24.8		8.0		1.3	1.5	29.7	5.8	
LOS				C		A		A	A	C	A	
Approach Delay					9.4			1.3			6.4	
Approach LOS					A			A			A	
Queue Length 50th (ft)				2		0		3	0	8	310	
Queue Length 95th (ft)				11		30		26	m0	25	167	
Internal Link Dist (ft)		172			369			465			971	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)				185					175	230		
50th Bay Block Time %											10%	
95th Bay Block Time %												
Queuing Penalty (veh)											1	

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 28 (43%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.51
Intersection Signal Delay: 4.5 Intersection LOS: A
Intersection Capacity Utilization 53.9% ICU Level of Service A
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Wellness Way & Deer Valley Road

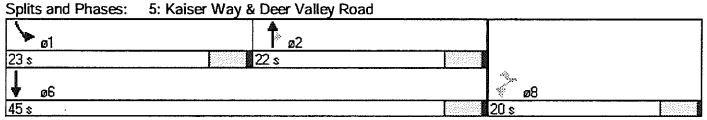


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	0	0	0	1770	0	1583	0	3539	1583	1770	1863	0
Flt Permitted				0.950						0.950		
Satd. Flow (perm)	0	0	0	1770	0	1583	0	3539	1583	1770	1863	0
Satd. Flow (RTOR)						120			79			
Volume (vph)	0	0	0	25	0	108	0	434	71	339	417	0
Lane Group Flow (vph)	0	0	0	28	0	120	0	482	79	377	463	0
Turn Type				custom		custom			Perm	Prot		
Protected Phases								2		1	6	
Permitted Phases				8		8			2			
Total Split (s)	0.0	0.0	0.0	20.0	0.0	20.0	0.0	22.0	22.0	23.0	45.0	0.0
Act Effct Green (s)				7.9		7.9		32.1	32.1	17.9	53.6	
Actuated g/C Ratio				0.12		0.12		0.49	0.49	0.28	0.82	
v/c Ratio				0.13		0.40		0.28	0.10	0.77	0.30	
Uniform Delay, d1				26.5		0.0		10.1	0.0	21.7	1.7	
Delay				24.8		6.1		10.6	2.4	26.1	3.6	
LOS				C		A		B	A	C	A	
Approach Delay					9.6			9.4			13.7	
Approach LOS					A			A			B	
Queue Length 50th (ft)				10		0		62	0	165	19	
Queue Length 95th (ft)				30		39		103	13	#254	181	
Internal Link Dist (ft)		197			305			523			465	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)						90			480	220		
50th Bay Block Time %												
95th Bay Block Time %										24%		
Queuing Penalty (veh)										54		

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 16 (25%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.77
Intersection Signal Delay: 11.8 Intersection LOS: B
Intersection Capacity Utilization 47.5% ICU Level of Service A
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: Kaiser Way & Deer Valley Road

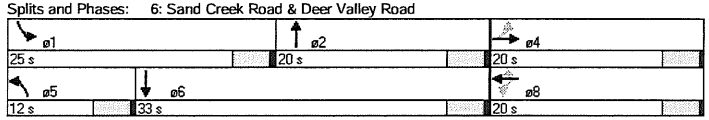


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1863	1863	0	0	1770	1863	1863	1844	0	1863	1863	0
Flt Permitted					0.757							
Satd. Flow (perm)	1863	1863	0	0	1410	1863	1863	1844	0	1863	1863	0
Satd. Flow (RTOR)								5				
Volume (vph)	0	0	0	17	0	0	0	505	35	0	441	1
Lane Group Flow (vph)	0	0	0	0	19	0	0	600	0	0	491	0
Turn Type	Perm			Perm		Perm	Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8						
Total Split (s)	20.0	20.0	0.0	20.0	20.0	20.0	12.0	20.0	0.0	25.0	33.0	0.0
Act Effct Green (s)					7.2			62.0			62.0	
Actuated g/C Ratio					0.11			0.95			0.95	
v/c Ratio					0.12			0.34			0.28	
Uniform Delay, d1					30.3			0.8			0.8	
Delay					25.8			0.9			0.3	
LOS					C			A			A	
Approach Delay		0.0			25.8			0.9			0.3	
Approach LOS		A			C			A			A	
Queue Length 50th (ft)					7			0			0	
Queue Length 95th (ft)					24			90			23	
Internal Link Dist (ft)		412			943			602			523	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)												
50th Bay Block Time %												
95th Bay Block Time %								12%				
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 16 (25%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.34
Intersection Signal Delay: 1.0 Intersection LOS: A
Intersection Capacity Utilization 41.9% ICU Level of Service A

Splits and Phases: 6: Sand Creek Road & Deer Valley Road

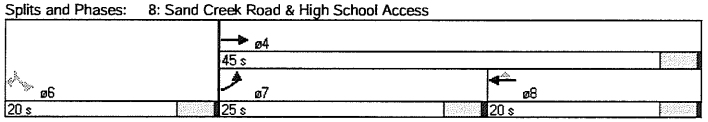


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1863	3539	0	0	3539	1583	0	0	0	1770	0	1863
Flt Permitted										0.950		
Satd. Flow (perm)	1863	3539	0	0	3539	1583	0	0	0	1770	0	1863
Satd. Flow (RTOR)						1091						
Volume (vph)	0	0	0	0	0	422	0	0	0	205	0	0
Lane Group Flow (vph)	0	0	0	0	0	469	0	0	0	228	0	0
Turn Type	Prot					Perm				custom		custom
Protected Phases	7	4			8							
Permitted Phases						8				6		6
Total Split (s)	25.0	45.0	0.0	0.0	20.0	20.0	0.0	0.0	0.0	20.0	0.0	20.0
Act Effct Green (s)						45.2				13.8		
Actuated g/C Ratio						0.70				0.21		
v/c Ratio						0.33				0.61		
Uniform Delay, d1						0.0				23.1		
Delay						0.2				22.7		
LOS						A				C		
Approach Delay		0.0			0.2						22.7	
Approach LOS		A			A						C	
Queue Length 50th (ft)						1				82		
Queue Length 95th (ft)						0				137		
Internal Link Dist (ft)		2570			1012			515			1044	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)												
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 61 (94%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.61
Intersection Signal Delay: 7.5 Intersection LOS: A
Intersection Capacity Utilization 32.4% ICU Level of Service A

Splits and Phases: 8: Sand Creek Road & High School Access

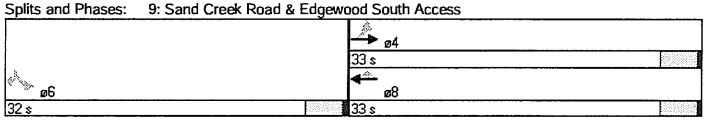


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1863	3539	0	0	3539	1863	0	0	0	1863	0	1863
Flt Permitted												
Satd. Flow (perm)	1863	3539	0	0	3539	1863	0	0	0	1863	0	1863
Satd. Flow (RTOR)												
Volume (vph)	0	205	0	0	422	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	228	0	0	469	0	0	0	0	0	0	0
Turn Type	Perm					Perm				custom		custom
Protected Phases		4			8							
Permitted Phases	4					8				6		6
Total Split (s)	33.0	33.0	0.0	0.0	33.0	33.0	0.0	0.0	0.0	32.0	0.0	32.0
Act Effct Green (s)		52.5			52.5							
Actuated g/C Ratio		0.81			0.81							
v/c Ratio		0.08			0.16							
Uniform Delay, d1		1.3			1.4							
Delay		0.0			0.7							
LOS		A			A							
Approach Delay		0.0			0.7						0.0	
Approach LOS		A			A						A	
Queue Length 50th (ft)		0			1							
Queue Length 95th (ft)		0			15							
Internal Link Dist (ft)		1012			367			678			1094	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)												
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 49 (75%), Referenced to phase 4:EBTL and 8:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.16
Intersection Signal Delay: 0.5 Intersection LOS: A
Intersection Capacity Utilization 16.3% ICU Level of Service A

Splits and Phases: 9: Sand Creek Road & Edgewood South Access

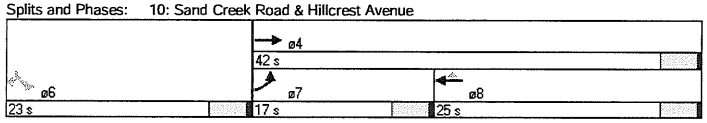


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	3539	0	0	3539	1863	0	0	0	1863	0	1583
Flt Permitted	0.950											
Satd. Flow (perm)	1770	3539	0	0	3539	1863	0	0	0	1863	0	1583
Satd. Flow (RTOR)												1091
Volume (vph)	205	0	0	0	0	0	0	0	0	0	0	422
Lane Group Flow (vph)	228	0	0	0	0	0	0	0	0	0	0	469
Turn Type	Prot					Perm				custom		custom
Protected Phases	7	4			8							
Permitted Phases						8				6		6
Total Split (s)	17.0	42.0	0.0	0.0	25.0	25.0	0.0	0.0	0.0	23.0	0.0	23.0
Act Effct Green (s)	12.8											10.2
Actuated g/C Ratio	0.20											0.16
v/c Ratio	0.65											0.40
Uniform Delay, d1	24.1											0.0
Delay	40.6											4.2
LOS	D											A
Approach Delay		40.6			0.0						4.2	
Approach LOS		D			A						A	
Queue Length 50th (ft)	103											129
Queue Length 95th (ft)	168											182
Internal Link Dist (ft)		367			1265			116			1953	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)												
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 58 (89%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.65
Intersection Signal Delay: 16.1 Intersection LOS: B
Intersection Capacity Utilization 32.4% ICU Level of Service A

Splits and Phases: 10: Sand Creek Road & Hillcrest Avenue

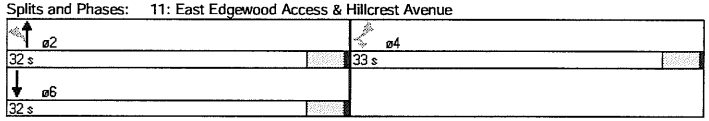


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1863	0	1863	0	0	0	1863	3539	0	0	3539	0
Flt Permitted												
Satd. Flow (perm)	1863	0	1863	0	0	0	1863	3539	0	0	3539	0
Satd. Flow (RTOR)												
Volume (vph)	0	0	0	0	0	0	0	205	0	0	422	0
Lane Group Flow (vph)	0	0	0	0	0	0	0	228	0	0	469	0
Turn Type	custom		custom				Perm					
Protected Phases								2			6	
Permitted Phases	4		4				2					
Total Split (s)	33.0	0.0	33.0	0.0	0.0	0.0	32.0	32.0	0.0	0.0	32.0	0.0
Act Effct Green (s)								65.0			65.0	
Actuated g/C Ratio								1.00			1.00	
v/c Ratio								0.06			0.13	
Uniform Delay, d1								0.0			0.0	
Delay								0.0			0.0	
LOS								A			A	
Approach Delay		0.0						0.0			0.0	
Approach LOS		A						A			A	
Queue Length 50th (ft)								0			0	
Queue Length 95th (ft)								0			0	
Internal Link Dist (ft)		296			524			1953			777	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)												
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 16 (25%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.13
Intersection Signal Delay: 0.0 Intersection LOS: A
Intersection Capacity Utilization 16.3% ICU Level of Service A

Splits and Phases: 11: East Edgewood Access & Hillcrest Avenue

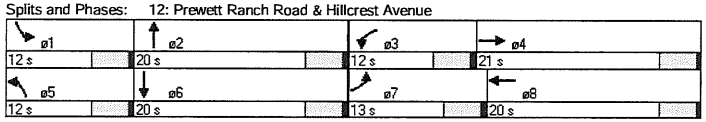


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	1803	0	1863	1829	0	1770	3539	0	1770	3429	0
Flt Permitted	0.950						0.950			0.950		
Satd. Flow (perm)	1770	1803	0	1863	1829	0	1770	3539	0	1770	3429	0
Satd. Flow (RTOR)		9			7						48	
Volume (vph)	125	30	8	0	47	6	4	237	0	13	423	109
Lane Group Flow (vph)	139	42	0	0	59	0	4	263	0	14	591	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Total Split (s)	13.0	21.0	0.0	12.0	20.0	0.0	12.0	20.0	0.0	12.0	20.0	0.0
Act Effct Green (s)	9.3	16.6			8.2		6.8	42.8		7.0	42.9	
Actuated g/C Ratio	0.14	0.26			0.13		0.10	0.66		0.11	0.66	
v/c Ratio	0.55	0.09			0.25		0.02	0.11		0.07	0.26	
Uniform Delay, d1	27.0	14.2			24.4		30.2	6.7		30.4	6.7	
Delay	26.1	12.4			22.8		38.8	1.1		18.2	7.3	
LOS	C	B			C		D	A		B	A	
Approach Delay		22.9			22.8			1.6			7.5	
Approach LOS		C			C			A			A	
Queue Length 50th (ft)	51	9			19		2	3		7	63	
Queue Length 95th (ft)	101	26			48		11	7		10	211	
Internal Link Dist (ft)		241			477			777			954	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	100											
50th Bay Block Time %												
95th Bay Block Time %	10%											
Queuing Penalty (veh)	2											

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 28 (43%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.55
Intersection Signal Delay: 9.4 — Intersection LOS: A
Intersection Capacity Utilization 37.9% — ICU Level of Service A

Splits and Phases: 12: Prewett Ranch Road & Hillcrest Avenue

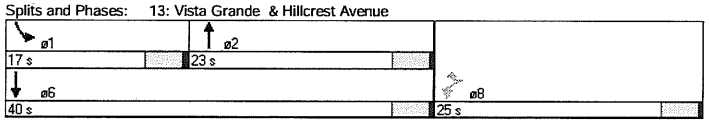


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	0	0	0	1770	0	1583	0	3461	0	1770	3539	0
Flt Permitted				0.950						0.950		
Satd. Flow (perm)	0	0	0	1770	0	1583	0	3461	0	1770	3539	0
Satd. Flow (RTOR)						66		30				
Volume (vph)	0	0	0	63	0	59	0	317	53	56	486	0
Lane Group Flow (vph)	0	0	0	70	0	66	0	411	0	62	540	0
Turn Type				custom		custom				Prot		
Protected Phases								2		1	6	
Permitted Phases				8		8						
Total Split (s)	0.0	0.0	0.0	25.0	0.0	25.0	0.0	23.0	0.0	17.0	40.0	0.0
Act Effct Green (s)				8.7		8.7		45.1		8.6	52.8	
Actuated g/C Ratio				0.13		0.13		0.69		0.13	0.81	
v/c Ratio				0.29		0.24		0.17		0.26	0.19	
Uniform Delay, d1				26.4		0.0		4.2		27.5	1.7	
Delay				24.8		7.6		5.4		19.5	4.4	
LOS				C		A		A		B	A	
Approach Delay					16.5			5.4			6.0	
Approach LOS					B			A			A	
Queue Length 50th (ft)				26		0		52		39	54	
Queue Length 95th (ft)				56		29		87		m43	109	
Internal Link Dist (ft)		216			502			954			614	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)				100						195		
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 16 (25%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.29
Intersection Signal Delay: 7.0 — Intersection LOS: A
Intersection Capacity Utilization 28.9% — ICU Level of Service A
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 13: Vista Grande & Hillcrest Avenue



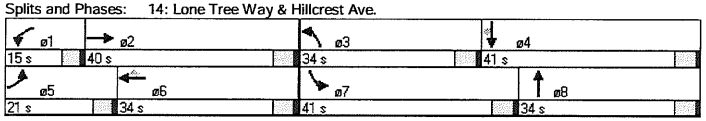
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	4827	0	1770	5085	1583	1770	3430	0	*1900	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	4827	0	1769	5085	1583	1770	3430	0	3422	3539	1583
Satd. Flow (RTOR)		87				459		20				263
Volume (vph)	225	820	368	58	1131	556	240	103	24	746	128	355
Lane Group Flow (vph)	265	1398	0	62	1216	598	324	171	0	857	147	408
Turn Type	Prot			Prot		Perm	Prot			Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases						6						4
Total Split (s)	21.0	40.0	0.0	15.0	34.0	34.0	34.0	34.0	0.0	41.0	41.0	41.0
Act Effct Green (s)	17.9	54.6		10.5	45.0	45.0	28.1	17.0		38.0	26.9	26.9
Actuated g/C Ratio	0.14	0.42		0.08	0.35	0.35	0.22	0.13		0.29	0.21	0.21
v/c Ratio	1.08	0.67		0.43	0.69	0.71	0.85	0.37		1.54	0.20	0.76
Uniform Delay, d1	56.0	29.0		58.0	36.5	7.4	48.9	45.4		46.0	42.6	16.3
Delay	68.8	26.9		67.2	31.6	11.7	49.1	47.1		211.0	41.8	16.4
LOS	E	C		E	C	B	D	D		F	D	B
Approach Delay		33.6			26.5			48.4			137.1	
Approach LOS		C			C			D			F	
Queue Length 50th (ft)	~249	330		54	239	140	278	70		~522	57	126
Queue Length 95th (ft)	m170	m305		89	#491	#450	312	63		#621	73	198
Internal Link Dist (ft)		945			1420			712			1758	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	350			210		210	195			855		
50th Bay Block Time %					9%		15%					
95th Bay Block Time %					27%	16%	13%					
Queuing Penalty (veh)					11	32	12					

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 78 (60%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.54
Intersection Signal Delay: 59.3 Intersection LOS: E
Intersection Capacity Utilization 82.7% ICU Level of Service D

* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 14: Lone Tree Way & Hillcrest Ave.

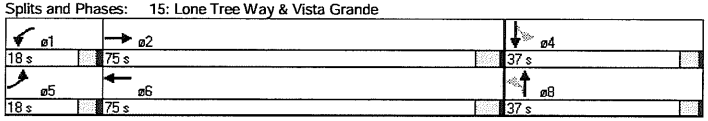


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	5062	0	1770	5070	0	1770	1641	0	1770	1682	0
Flt Permitted	0.950			0.950			0.691			0.536		
Satd. Flow (perm)	1770	5062	0	1769	5070	0	1287	1641	0	998	1682	0
Satd. Flow (RTOR)		5			3			125			46	
Volume (vph)	51	1455	39	50	1699	30	89	29	110	45	18	33
Lane Group Flow (vph)	57	1660	0	54	1859	0	101	158	0	63	71	0
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		
Total Split (s)	18.0	75.0	0.0	18.0	75.0	0.0	37.0	37.0	0.0	37.0	37.0	0.0
Act Effct Green (s)	11.0	95.8		10.9	95.7		16.4	16.4		16.4	16.4	
Actuated g/C Ratio	0.08	0.74		0.08	0.74		0.13	0.13		0.13	0.13	
v/c Ratio	0.38	0.44		0.36	0.50		0.62	0.50		0.50	0.28	
Uniform Delay, d1	57.4	7.1		57.3	7.5		53.8	10.6		53.0	17.7	
Delay	53.0	13.0		51.5	6.4		52.9	13.5		51.8	21.1	
LOS	D	B		D	A		D	B		D	C	
Approach Delay		14.3			7.7			28.9			35.5	
Approach LOS		B			A			C			D	
Queue Length 50th (ft)	48	200		46	134		82	25		50	19	
Queue Length 95th (ft)	m44	m372		95	160		133	84		73	41	
Internal Link Dist (ft)		1420			1055			786			614	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	200			200			130			100		
50th Bay Block Time %		2%										
95th Bay Block Time %		17%					6%					
Queuing Penalty (veh)		5					5					

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 55 (42%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.62
Intersection Signal Delay: 12.8 Intersection LOS: B
Intersection Capacity Utilization 59.0% ICU Level of Service A
m Volume for 95th percentile queue is metered by upstream signal.

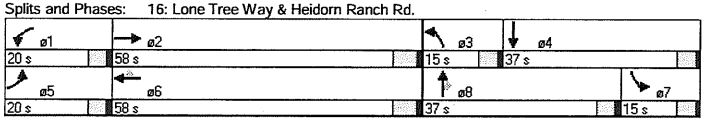
Splits and Phases: 15: Lone Tree Way & Vista Grande



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	5055	0	1770	4806	1362	3433	1863	1583	1770	1583	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	5055	0	1770	4806	1362	3433	1863	1583	1770	1583	0
Satd. Flow (RTOR)		6				3			54		238	
Volume (vph)	3	1515	69	32	1666	7	67	1	27	9	0	1
Lane Group Flow (vph)	3	1616	0	36	1893	8	134	2	54	19	2	0
Turn Type	Prot			Prot		Perm	Prot		Perm	Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases						6			8			
Total Split (s)	20.0	58.0	0.0	20.0	58.0	58.0	15.0	37.0	37.0	15.0	37.0	0.0
Act Effct Green (s)	7.4	99.5		10.6	106.1	106.1	13.0	10.1	10.1	9.4	8.1	
Actuated g/C Ratio	0.06	0.77		0.08	0.82	0.82	0.10	0.08	0.08	0.07	0.06	
v/c Ratio	0.03	0.42		0.25	0.48	0.01	0.39	0.01	0.31	0.15	0.01	
Uniform Delay, d1	62.3	7.2		58.7	6.1	2.4	54.8	55.5	0.0	59.7	0.0	
Delay	66.7	2.5		62.0	0.8	0.6	54.4	56.0	14.7	56.1	0.0	
LOS	E	A		E	A	A	D	E	B	E	A	
Approach Delay		2.6			1.9			43.1			50.8	
Approach LOS		A			A			D			D	
Queue Length 50th (ft)	2	99		31	4	0	56	2	0	15	0	
Queue Length 95th (ft)	m6	51		m58	66	m1	48	6	4	21	0	
Internal Link Dist (ft)		1055			905			972			316	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	185			400		95	200		200	50		
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 55 (42%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.48
Intersection Signal Delay: 4.6 Intersection LOS: A
Intersection Capacity Utilization 53.8% ICU Level of Service A
m Volume for 95th percentile queue is metered by upstream signal.

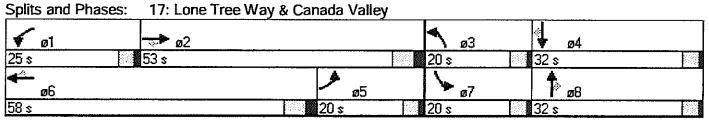
Splits and Phases: 16: Lone Tree Way & Heidorn Ranch Rd.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	5085	1583	3433	5085	1583	3433	1669	1504	1770	1863	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	5085	1583	3433	5085	1583	3433	1669	1504	1770	1863	1583
Satd. Flow (RTOR)			94			220		22	91			169
Volume (vph)	90	1436	91	247	1460	202	41	39	87	483	65	152
Lane Group Flow (vph)	93	1480	94	268	1587	220	59	92	91	537	72	169
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Total Split (s)	20.0	53.0	53.0	25.0	58.0	58.0	20.0	32.0	32.0	20.0	32.0	32.0
Act Effct Green (s)	17.0	74.9	74.9	15.5	73.5	73.5	7.6	10.6	10.6	17.0	21.7	21.7
Actuated g/C Ratio	0.13	0.58	0.58	0.12	0.57	0.57	0.06	0.08	0.08	0.13	0.17	0.17
v/c Ratio	0.40	0.51	0.10	0.65	0.55	0.22	0.29	0.59	0.44	2.32	0.23	0.42
Uniform Delay, d1	51.7	16.9	0.0	54.6	18.4	0.0	59.6	43.0	0.0	56.5	46.9	0.0
Delay	34.1	5.3	0.5	77.8	9.4	0.4	58.3	42.8	10.5	314.6	47.7	6.9
LOS	C	A	A	E	A	A	E	D	B	F	D	A
Approach Delay		6.6			17.2			34.4			223.0	
Approach LOS		A			B			C			F	
Queue Length 50th (ft)	80	109	3	124	118	1	25	61	0	~738	54	0
Queue Length 95th (ft)	123	64	0	169	141	8	36	84	23	#960	99	63
Internal Link Dist (ft)		905			760			542			1064	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	320		630	400		350	150			170		170
50th Bay Block Time %										75%		
95th Bay Block Time %										80%		
Queuing Penalty (veh)										187		

Intersection Summary
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 37 (28%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 2.32
Intersection Signal Delay: 48.0 Intersection LOS: D
Intersection Capacity Utilization 82.7% ICU Level of Service D
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 17: Lone Tree Way & Canada Valley

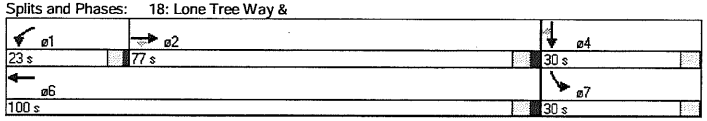


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	0	5085	1583	3433	5085	0	0	0	0	1681	1681	1583
Flt Permitted				0.950						0.950	0.950	
Satd. Flow (perm)	0	5085	1583	3433	5085	0	0	0	0	1681	1681	1583
Satd. Flow (RTOR)			538									21
Volume (vph)	0	956	463	219	1881	0	0	0	0	74	0	54
Lane Group Flow (vph)	0	1112	538	252	2162	0	0	0	0	41	41	60
Turn Type			Perm	Prot						Prot		Perm
Protected Phases		2		1	6					7	4	
Permitted Phases			2									4
Total Split (s)	0.0	77.0	77.0	23.0	100.0	0.0	0.0	0.0	0.0	30.0	30.0	30.0
Act Effct Green (s)		84.9	84.9	15.1	103.6					22.9	21.6	22.9
Actuated g/C Ratio		0.65	0.65	0.12	0.80					0.18	0.17	0.18
v/c Ratio		0.33	0.44	0.63	0.53					0.14	0.15	0.20
Uniform Delay, d1		10.4	0.0	54.8	5.2					46.1	46.1	30.0
Delay		11.3	2.5	61.5	3.6					42.4	42.4	29.5
LOS		B	A	E	A					D	D	C
Approach Delay		8.5			9.7						36.9	
Approach LOS		A			A						D	
Queue Length 50th (ft)		103	59	93	71					29	29	27
Queue Length 95th (ft)		m99	m56	m69	m48					64	64	67
Internal Link Dist (ft)		760			760			536			445	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)				310						280		
50th Bay Block Time %					2%							
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 72 (55%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.63
Intersection Signal Delay: 10.1 Intersection LOS: B
Intersection Capacity Utilization 53.9% ICU Level of Service A
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 18: Lone Tree Way &

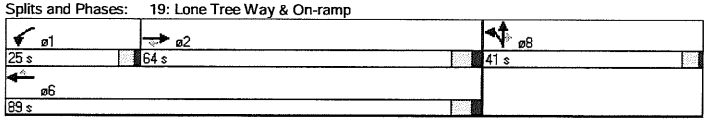


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	0	5085	1583	1770	5085	1583	1681	1681	1583	0	0	0
Flt Permitted				0.950			0.950	0.950				
Satd. Flow (perm)	0	5085	1583	1770	5085	1583	1681	1681	1583	0	0	0
Satd. Flow (RTOR)			101			66			186			
Volume (vph)	0	944	86	14	1236	58	861	0	186	0	0	0
Lane Group Flow (vph)	0	1111	101	16	1405	66	979	978	423	0	0	0
Turn Type			Perm	Prot		Perm	Split		Perm			
Protected Phases		2		1	6		8	8				
Permitted Phases			2			6			8			
Total Split (s)	0.0	64.0	64.0	25.0	89.0	89.0	41.0	41.0	41.0	0.0	0.0	0.0
Act Effct Green (s)		81.7	81.7	6.7	86.1	86.1	38.0	38.0	38.0			
Actuated g/C Ratio		0.63	0.63	0.05	0.66	0.66	0.29	0.29	0.29			
v/c Ratio		0.35	0.10	0.18	0.42	0.06	1.99	1.99	0.71			
Uniform Delay, d1		12.6	0.0	61.9	10.3	0.0	46.0	46.0	21.9			
Delay		5.1	0.3	58.6	10.4	1.8	280.6	280.3	22.8			
LOS		A	A	E	B	A	F	F	C			
Approach Delay		4.7			10.5			234.6				
Approach LOS		A			B			F				
Queue Length 50th (ft)		20	0	13	187	0	~1351	~1349	183			
Queue Length 95th (ft)		25	0	37	209	15	#561	#561	49			
Internal Link Dist (ft)		760			620			935			1156	
50th Up Block Time (%)							31%	31%				
95th Up Block Time (%)												
Turn Bay Length (ft)			240	280		250	1000					
50th Bay Block Time %							26%	26%				
95th Bay Block Time %												
Queuing Penalty (veh)							127	127				

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 88 (68%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.99
Intersection Signal Delay: 114.1 Intersection LOS: F
Intersection Capacity Utilization 88.0% ICU Level of Service D
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 19: Lone Tree Way & On-ramp

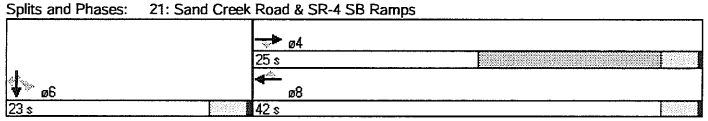


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	0	3539	1583	0	3539	1583	0	0	0	1681	1610	1504
Flt Permitted										0.950	0.950	
Satd. Flow (perm)	0	3539	1583	0	3539	1583	0	0	0	1681	1610	1504
Satd. Flow (RTOR)			13			306						13
Volume (vph)	0	59	12	0	18	275	0	0	0	426	0	12
Lane Group Flow (vph)	0	66	13	0	20	306	0	0	0	237	236	13
Turn Type			Perm			Perm				Perm		Perm
Protected Phases		4			8						6	
Permitted Phases			4			8				6		6
Total Split (s)	0.0	25.0	25.0	0.0	42.0	42.0	0.0	0.0	0.0	23.0	23.0	23.0
Act Effct Green (s)		43.8	43.8		43.8	43.8				15.2	15.2	15.2
Actuated g/C Ratio		0.67	0.67		0.67	0.67				0.23	0.23	0.23
v/c Ratio		0.03	0.01		0.01	0.26				0.60	0.63	0.04
Uniform Delay, d1		3.5	0.0		3.5	0.0				22.2	22.3	0.0
Delay		4.6	2.8		3.5	0.6				21.4	21.6	8.9
LOS		A	A		A	A				C	C	A
Approach Delay		4.3			0.8						21.2	
Approach LOS		A			A						C	
Queue Length 50th (ft)		3	0		1	0				88	92	0
Queue Length 95th (ft)		11	5		3	0				142	149	11
Internal Link Dist (ft)		1483			767			374			330	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)												
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 58 (89%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.63
Intersection Signal Delay: 12.2 Intersection LOS: B
Intersection Capacity Utilization 23.2% ICU Level of Service A

Splits and Phases: 21: Sand Creek Road & SR-4 SB Ramps

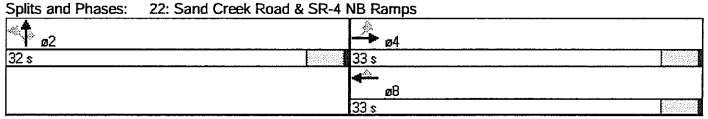


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	3433	3539	0	0	3539	1583	1681	1441	1504	0	0	0
Flt Permitted	0.551						0.950					
Satd. Flow (perm)	1991	3539	0	0	3539	1583	1681	1441	1504	0	0	0
Satd. Flow (RTOR)						587		266	266			
Volume (vph)	35	450	0	0	283	528	10	0	235	0	0	0
Lane Group Flow (vph)	39	500	0	0	314	587	11	130	131	0	0	0
Turn Type	Perm					Perm	Perm		Perm			
Protected Phases		4			8			2				
Permitted Phases	4					8	2		2			
Total Split (s)	33.0	33.0	0.0	0.0	33.0	33.0	32.0	32.0	32.0	0.0	0.0	0.0
Act Effct Green (s)	52.1	52.1			52.1	52.1	7.0	7.0	7.0			
Actuated g/C Ratio	0.80	0.80			0.80	0.80	0.11	0.11	0.11			
v/c Ratio	0.02	0.18			0.11	0.42	0.06	0.33	0.33			
Uniform Delay, d1	1.3	1.5			1.4	0.0	26.0	0.0	0.0			
Delay	0.2	0.2			1.5	0.2	25.9	0.0	0.0			
LOS	A	A			A	A	C	A	A			
Approach Delay		0.2			0.6			1.0				
Approach LOS		A			A			A				
Queue Length 50th (ft)	0	1			8	0	4	0	0			
Queue Length 95th (ft)	m0	2			15	13	17	0	0			
Internal Link Dist (ft)		767			541			321			323	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)												
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 49 (75%), Referenced to phase 4:EBTL, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.42
Intersection Signal Delay: 0.6 Intersection LOS: A
Intersection Capacity Utilization 53.0% ICU Level of Service A
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 22: Sand Creek Road & SR-4 NB Ramps

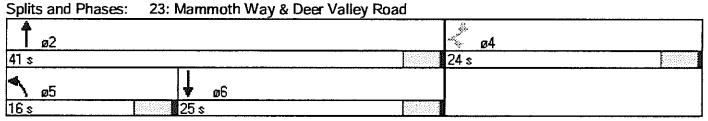


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	0	1583	0	0	0	1770	3539	0	0	3522	0
Flt Permitted	0.950						0.950					
Satd. Flow (perm)	1770	0	1583	0	0	0	1770	3539	0	0	3522	0
Satd. Flow (RTOR)			22								5	
Volume (vph)	81	0	20	0	0	0	10	551	0	0	613	20
Lane Group Flow (vph)	90	0	22	0	0	0	11	612	0	0	703	0
Turn Type	custom		custom				Prot					
Protected Phases							5	2			6	
Permitted Phases	4		4									
Total Split (s)	24.0	0.0	24.0	0.0	0.0	0.0	16.0	41.0	0.0	0.0	25.0	0.0
Act Effct Green (s)	9.4		9.4				7.0	52.1			50.0	
Actuated g/C Ratio	0.14		0.14				0.11	0.80			0.77	
v/c Ratio	0.35		0.09				0.06	0.22			0.26	
Uniform Delay, d1	26.0		0.0				30.3	1.9			3.7	
Delay	24.5		10.6				15.6	4.7			8.8	
LOS	C		B				B	A			A	
Approach Delay		21.7						4.9			8.8	
Approach LOS		C						A			A	
Queue Length 50th (ft)	33		0				3	81			37	
Queue Length 95th (ft)	67		16				10	125			206	
Internal Link Dist (ft)		372			380			971			970	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)												
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 16 (25%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.35
Intersection Signal Delay: 8.1 Intersection LOS: A
Intersection Capacity Utilization 31.2% ICU Level of Service A

Splits and Phases: 23: Mammoth Way & Deer Valley Road

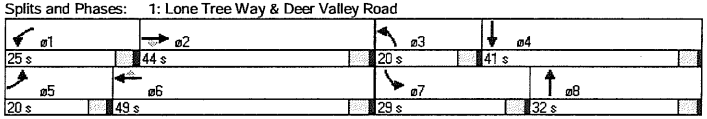


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	3433	3323	0	*2000	3507	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	3433	3323	0	1770	3507	0
Satd. Flow (RTOR)			59			92		120			5	
Volume (vph)	122	1331	256	259	1049	296	295	356	243	312	346	22
Lane Group Flow (vph)	144	1566	301	320	1295	365	343	697	0	480	566	0
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6						
Total Split (s)	20.0	44.0	44.0	25.0	49.0	49.0	20.0	32.0	0.0	29.0	41.0	0.0
Act Effct Green (s)	15.5	42.6	42.6	22.0	49.3	49.3	16.7	27.3		26.0	36.6	
Actuated g/C Ratio	0.12	0.33	0.33	0.17	0.38	0.38	0.13	0.21		0.20	0.28	
v/c Ratio	0.69	1.35	0.54	1.07	0.97	0.56	0.78	0.88		1.20	0.57	
Uniform Delay, d1	55.0	43.6	28.0	54.0	39.5	22.9	54.9	40.9		52.0	39.5	
Delay	55.0	164.2	29.3	96.2	82.9	42.7	52.3	46.8		133.5	39.6	
LOS	D	F	C	F	F	D	D	D		F	D	
Approach Delay		136.2			77.6			48.6			82.7	
Approach LOS		F			E			D			F	
Queue Length 50th (ft)	117	~928	169	~303	~630	257	147	217		~490	210	
Queue Length 95th (ft)	178	#981	243	#422	#638	315	194	251		#413	182	
Internal Link Dist (ft)		900			1588			664			709	
50th Up Block Time (%)		3%										
95th Up Block Time (%)		8%										
Turn Bay Length (ft)	195		75	195		75	180			150		
50th Bay Block Time %		59%	39%	36%	59%	53%		18%		59%	21%	
95th Bay Block Time %		60%	48%	32%	45%	39%	10%	17%		53%	13%	
Queuing Penalty (veh)		86	342	220	167	300	18	60		158	82	

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 80 (62%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.35
Intersection Signal Delay: 92.9 Intersection LOS: F
Intersection Capacity Utilization 121.4% ICU Level of Service H
* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Lone Tree Way & Deer Valley Road

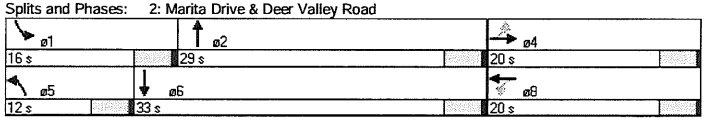


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	1583	0	1770	1591	0	1770	3536	0	1770	3525	0
Flt Permitted	0.619			0.754			0.950			0.950		
Satd. Flow (perm)	1153	1583	0	1405	1591	0	1770	3536	0	1770	3525	0
Satd. Flow (RTOR)		328			140			1			5	
Volume (vph)	11	0	5	36	4	126	14	829	5	32	803	21
Lane Group Flow (vph)	12	6	0	40	144	0	16	927	0	36	915	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Total Split (s)	20.0	20.0	0.0	20.0	20.0	0.0	12.0	29.0	0.0	16.0	33.0	0.0
Act Effct Green (s)	8.4	8.4		8.4	8.4		7.2	48.3		7.8	50.8	
Actuated g/C Ratio	0.13	0.13		0.13	0.13		0.11	0.74		0.12	0.78	
v/c Ratio	0.08	0.01		0.22	0.44		0.08	0.35		0.17	0.33	
Uniform Delay, d1	25.9	0.0		26.3	0.7		30.3	4.4		29.0	3.6	
Delay	23.8	0.0		24.7	5.9		30.5	1.4		28.8	1.7	
LOS	C	A		C	A		C	A		C	A	
Approach Delay		15.9			10.0			1.9			2.7	
Approach LOS		B			A			A			A	
Queue Length 50th (ft)	4	0		15	1		6	4		15	15	
Queue Length 95th (ft)	17	0		38	44		m17	91		m24	m125	
Internal Link Dist (ft)		346			300			2263			664	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	40			100			175			125		
50th Bay Block Time %												
95th Bay Block Time %											4%	
Queuing Penalty (veh)											1	

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 16 (25%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.44
Intersection Signal Delay: 3.1 Intersection LOS: A
Intersection Capacity Utilization 41.2% ICU Level of Service A
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Marita Drive & Deer Valley Road

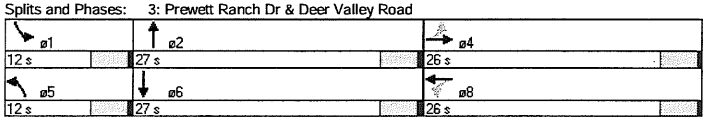


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	1779	0	1770	1730	0	1770	3497	0	1770	3461	0
Flt Permitted	0.557			0.631			0.950			0.950		
Satd. Flow (perm)	1038	1779	0	1175	1730	0	1770	3497	0	1770	3461	0
Satd. Flow (RTOR)		37			78			16			34	
Volume (vph)	84	97	42	18	99	90	89	652	57	147	587	101
Lane Group Flow (vph)	93	155	0	20	210	0	99	787	0	163	764	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Total Split (s)	26.0	26.0	0.0	26.0	26.0	0.0	12.0	27.0	0.0	12.0	27.0	0.0
Act Effct Green (s)	11.6	11.6		11.6	11.6		8.5	35.5		8.8	37.8	
Actuated g/C Ratio	0.18	0.18		0.18	0.18		0.13	0.55		0.14	0.58	
v/c Ratio	0.50	0.44		0.09	0.56		0.43	0.41		0.68	0.38	
Uniform Delay, d1	24.1	17.9		22.3	15.0		27.1	8.4		26.6	7.3	
Delay	22.9	16.9		20.1	14.3		25.4	4.8		41.8	7.6	
LOS	C	B		C	B		C	A		D	A	
Approach Delay		19.1			14.8			7.1			13.6	
Approach LOS		B			B			A			B	
Queue Length 50th (ft)	34	42		7	47		45	0		98	131	
Queue Length 95th (ft)	68	81		21	94		88	82		#139	178	
Internal Link Dist (ft)		416			350			970			2263	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	155			80			140			140		
50th Bay Block Time %											2%	
95th Bay Block Time %					18%					4%	11%	
Queuing Penalty (veh)					2					8	9	

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 16 (25%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.68
Intersection Signal Delay: 11.8 Intersection LOS: B
Intersection Capacity Utilization 61.5% ICU Level of Service B
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Prewett Ranch Dr & Deer Valley Road

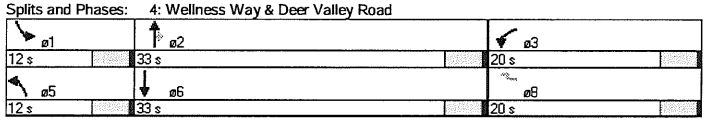


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	0	0	0	1770	0	1583	1863	3539	1583	1770	1863	0
Flt Permitted				0.950						0.950		
Satd. Flow (perm)	0	0	0	1770	0	1583	1863	3539	1583	1770	1863	0
Satd. Flow (RTOR)						46			6			
Volume (vph)	0	0	0	3	0	41	0	803	5	69	551	0
Lane Group Flow (vph)	0	0	0	3	0	46	0	892	6	77	612	0
Turn Type				Prot		custom	Prot		Perm	Prot		
Protected Phases				3			5	2		1	6	
Permitted Phases						8			2			
Total Split (s)	0.0	0.0	0.0	20.0	0.0	20.0	12.0	33.0	33.0	12.0	33.0	0.0
Act Effct Green (s)				7.2		7.2		48.7	48.7	8.3	59.3	
Actuated g/C Ratio				0.11		0.11		0.75	0.75	0.13	0.91	
v/c Ratio				0.02		0.21		0.34	0.01	0.34	0.36	
Uniform Delay, d1				28.7		0.0		4.1	0.0	26.9	1.1	
Delay				25.0		9.3		2.8	1.8	19.7	5.6	
LOS				C		A		A	A	B	A	
Approach Delay					10.3			2.8			7.2	
Approach LOS					B			A			A	
Queue Length 50th (ft)				1		0		11	0	39	0	
Queue Length 95th (ft)				8		26		58	m1	m57	206	
Internal Link Dist (ft)		172			369			465			946	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)				185					175	230		
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 28 (43%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.36
Intersection Signal Delay: 4.9 Intersection LOS: A
Intersection Capacity Utilization 48.9% ICU Level of Service A
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Wellness Way & Deer Valley Road

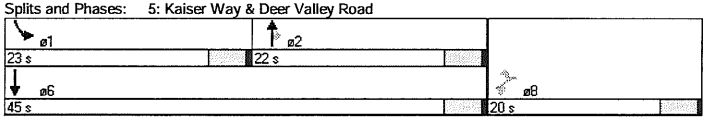


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	0	0	0	1770	0	1583	0	3539	1583	1770	1863	0
Flt Permitted				0.950						0.950		
Satd. Flow (perm)	0	0	0	1770	0	1583	0	3539	1583	1770	1863	0
Satd. Flow (RTOR)						320			36			
Volume (vph)	0	0	0	82	0	288	0	520	32	131	423	0
Lane Group Flow (vph)	0	0	0	91	0	320	0	578	36	146	470	0
Turn Type				custom		custom			Perm	Prot		
Protected Phases								2		1	6	
Permitted Phases				8		8			2			
Total Split (s)	0.0	0.0	0.0	20.0	0.0	20.0	0.0	22.0	22.0	23.0	45.0	0.0
Act Effct Green (s)				10.1		10.1		35.6	35.6	12.2	48.9	
Actuated g/C Ratio				0.16		0.16		0.55	0.55	0.19	0.75	
v/c Ratio				0.33		0.62		0.30	0.04	0.44	0.34	
Uniform Delay, d1				24.4		0.0		8.4	0.0	24.3	2.7	
Delay				23.3		3.4		8.5	2.2	25.2	1.0	
LOS				C		A		A	A	C	A	
Approach Delay					7.8			8.1			6.7	
Approach LOS					A			A			A	
Queue Length 50th (ft)				33		0		67	0	28	1	
Queue Length 95th (ft)				63		56		124	m6	118	85	
Internal Link Dist (ft)		197			305			523			465	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)						90			480	220		
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 16 (25%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.62
Intersection Signal Delay: 7.5 Intersection LOS: A
Intersection Capacity Utilization 42.5% ICU Level of Service A
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Kaiser Way & Deer Valley Road

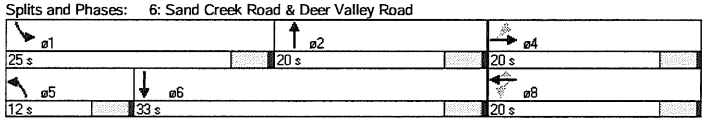


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	1863	0	0	1770	1863	1863	1853	0	1863	1863	0
Flt Permitted	0.732				0.757							
Satd. Flow (perm)	1364	1863	0	0	1410	1863	1863	1853	0	1863	1863	0
Satd. Flow (RTOR)								2				
Volume (vph)	1	0	0	35	0	0	0	551	17	0	504	1
Lane Group Flow (vph)	1	0	0	0	39	0	0	631	0	0	561	0
Turn Type	Perm			Perm		Perm	Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8						
Total Split (s)	20.0	20.0	0.0	20.0	20.0	20.0	12.0	20.0	0.0	25.0	33.0	0.0
Act Effct Green (s)	7.8				8.0			58.7			58.7	
Actuated g/C Ratio	0.12				0.12			0.90			0.90	
v/c Ratio	0.01				0.22			0.38			0.33	
Uniform Delay, d1	28.0				28.9			1.3			1.2	
Delay	23.0				25.2			1.8			1.1	
LOS	C				C			A			A	
Approach Delay		23.0			25.2			1.8			1.1	
Approach LOS		C			C			A			A	
Queue Length 50th (ft)	0				14			0			0	
Queue Length 95th (ft)	4				38			115			66	
Internal Link Dist (ft)		412			943			602			523	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)												
50th Bay Block Time %												
95th Bay Block Time %								15%				
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 16 (25%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.38
Intersection Signal Delay: 2.2 — Intersection LOS: A
Intersection Capacity Utilization 43.4% — ICU Level of Service A

Splits and Phases: 6: Sand Creek Road & Deer Valley Road

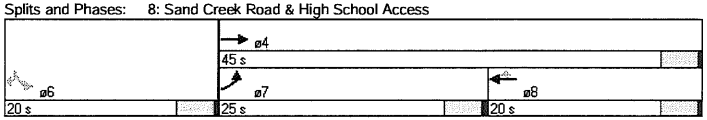


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1863	3539	0	0	3539	1583	0	0	0	1770	0	1863
Flt Permitted										0.950		
Satd. Flow (perm)	1863	3539	0	0	3539	1583	0	0	0	1770	0	1863
Satd. Flow (RTOR)						1091						
Volume (vph)	0	0	0	0	0	80	0	0	0	80	0	0
Lane Group Flow (vph)	0	0	0	0	0	89	0	0	0	89	0	0
Turn Type	Prot					Perm				custom		custom
Protected Phases	7	4			8							
Permitted Phases						8				6		6
Total Split (s)	25.0	45.0	0.0	0.0	20.0	20.0	0.0	0.0	0.0	20.0	0.0	20.0
Act Effct Green (s)						49.6				9.5		
Actuated g/C Ratio						0.76				0.15		
v/c Ratio						0.06				0.35		
Uniform Delay, d1						0.0				25.0		
Delay						0.0				24.3		
LOS						A				C		
Approach Delay		0.0			0.0						24.3	
Approach LOS		A			A						C	
Queue Length 50th (ft)						0				32		
Queue Length 95th (ft)						0				66		
Internal Link Dist (ft)		2570			1012			515			1044	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)												
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 61 (94%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.35
Intersection Signal Delay: 12.2 — Intersection LOS: B
Intersection Capacity Utilization 8.8% — ICU Level of Service A

Splits and Phases: 8: Sand Creek Road & High School Access

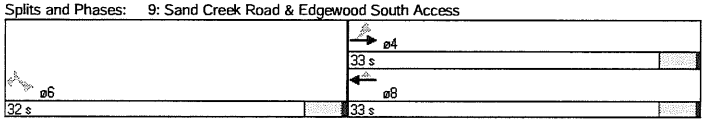


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1863	3539	0	0	3539	1863	0	0	0	1863	0	1863
Flt Permitted												
Satd. Flow (perm)	1863	3539	0	0	3539	1863	0	0	0	1863	0	1863
Satd. Flow (RTOR)												
Volume (vph)	0	80	0	0	80	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	89	0	0	89	0	0	0	0	0	0	0
Turn Type	Perm					Perm				custom		custom
Protected Phases		4			8							
Permitted Phases	4					8				6		6
Total Split (s)	33.0	33.0	0.0	0.0	33.0	33.0	0.0	0.0	0.0	32.0	0.0	32.0
Act Effct Green (s)		52.5			52.5							
Actuated g/C Ratio		0.81			0.81							
v/c Ratio		0.03			0.03							
Uniform Delay, d1		1.2			1.2							
Delay		0.0			0.8							
LOS		A			A							
Approach Delay		0.0			0.8						0.0	
Approach LOS		A			A						A	
Queue Length 50th (ft)		0			1							
Queue Length 95th (ft)		0			2							
Internal Link Dist (ft)		1012			367			678			1094	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)												
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 49 (75%), Referenced to phase 4:EBTL and 8:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.03
Intersection Signal Delay: 0.4 Intersection LOS: A
Intersection Capacity Utilization 6.7% ICU Level of Service A

Splits and Phases: 9: Sand Creek Road & Edgewood South Access

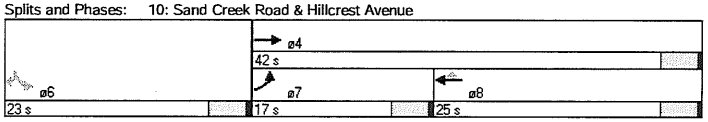


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	3539	0	0	3539	1863	0	0	0	1770	0	1583
Flt Permitted	0.950									0.950		
Satd. Flow (perm)	1770	3539	0	0	3539	1863	0	0	0	1770	0	1583
Satd. Flow (RTOR)												89
Volume (vph)	80	0	0	0	0	0	0	0	0	1	0	80
Lane Group Flow (vph)	89	0	0	0	0	0	0	0	0	1	0	89
Turn Type	Prot					Perm				custom		custom
Protected Phases	7	4			8							
Permitted Phases						8				6		6
Total Split (s)	17.0	42.0	0.0	0.0	25.0	25.0	0.0	0.0	0.0	23.0	0.0	23.0
Act Effct Green (s)	9.7									7.6		7.6
Actuated g/C Ratio	0.15									0.12		0.12
v/c Ratio	0.34									0.00		0.34
Uniform Delay, d1	25.7									25.0		0.0
Delay	38.2									25.0		8.7
LOS	D									C		A
Approach Delay		38.2			0.0						8.8	
Approach LOS		D			A						A	
Queue Length 50th (ft)	40									0		0
Queue Length 95th (ft)	83									3		0
Internal Link Dist (ft)		367			1265			116			1953	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)												
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 58 (89%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.34
Intersection Signal Delay: 23.4 Intersection LOS: C
Intersection Capacity Utilization 14.9% ICU Level of Service A

Splits and Phases: 10: Sand Creek Road & Hillcrest Avenue

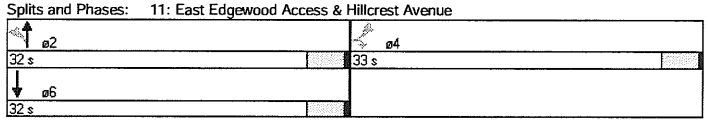


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1863	0	1863	0	0	0	1863	3539	0	0	3539	0
Flt Permitted												
Satd. Flow (perm)	1863	0	1863	0	0	0	1863	3539	0	0	3539	0
Satd. Flow (RTOR)												
Volume (vph)	0	0	0	0	0	0	0	80	0	0	81	0
Lane Group Flow (vph)	0	0	0	0	0	0	0	89	0	0	90	0
Turn Type	custom		custom				Perm					
Protected Phases								2			6	
Permitted Phases	4		4				2					
Total Split (s)	33.0	0.0	33.0	0.0	0.0	0.0	32.0	32.0	0.0	0.0	32.0	0.0
Act Effct Green (s)								65.0			65.0	
Actuated g/C Ratio								1.00			1.00	
v/c Ratio								0.03			0.03	
Uniform Delay, d1								0.0			0.0	
Delay								0.0			0.0	
LOS								A			A	
Approach Delay		0.0						0.0			0.0	
Approach LOS		A						A			A	
Queue Length 50th (ft)								0			0	
Queue Length 95th (ft)								0			0	
Internal Link Dist (ft)		296			524			1953			777	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)												
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 16 (25%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.03
Intersection Signal Delay: 0.0 Intersection LOS: A
Intersection Capacity Utilization 6.7% ICU Level of Service A

Splits and Phases: 11: East Edgewood Access & Hillcrest Avenue

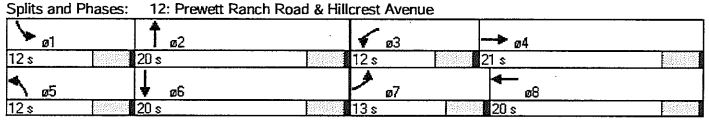


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	1844	0	1863	1723	0	1770	3539	0	1770	3260	0
Flt Permitted	0.950						0.950			0.950		
Satd. Flow (perm)	1770	1844	0	1863	1723	0	1770	3539	0	1770	3260	0
Satd. Flow (RTOR)		2			12						154	
Volume (vph)	126	24	2	0	11	11	2	102	0	22	125	139
Lane Group Flow (vph)	140	29	0	0	24	0	2	113	0	24	293	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Total Split (s)	13.0	21.0	0.0	12.0	20.0	0.0	12.0	20.0	0.0	12.0	20.0	0.0
Act Effct Green (s)	9.3	11.5			7.0		6.6	47.6		7.5	48.0	
Actuated g/C Ratio	0.14	0.18			0.11		0.10	0.73		0.12	0.74	
v/c Ratio	0.55	0.09			0.12		0.01	0.04		0.12	0.12	
Uniform Delay, d1	27.0	19.2			15.1		30.5	5.0		30.3	2.3	
Delay	26.1	18.7			18.5		35.5	1.3		24.8	2.3	
LOS	C	B			B		D	A		C	A	
Approach Delay		24.8			18.5			1.9			4.0	
Approach LOS		C			B			A			A	
Queue Length 50th (ft)	52	9			4		0	1		10	0	
Queue Length 95th (ft)	102	23			23		7	6		20	35	
Internal Link Dist (ft)		241			477			777			954	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	100											
50th Bay Block Time %												
95th Bay Block Time %	11%											
Queuing Penalty (veh)	1											

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 28 (43%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.55
Intersection Signal Delay: 9.8 Intersection LOS: A
Intersection Capacity Utilization 29.9% ICU Level of Service A

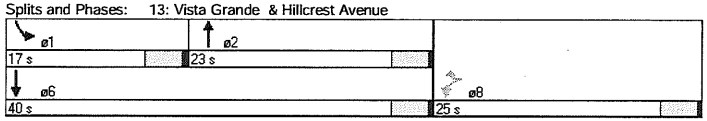
Splits and Phases: 12: Prewett Ranch Road & Hillcrest Avenue



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	0	0	0	1770	0	1583	0	3405	0	1770	3539	0
Flt Permitted				0.950						0.950		
Satd. Flow (perm)	0	0	0	1770	0	1583	0	3405	0	1770	3539	0
Satd. Flow (RTOR)						33		70				
Volume (vph)	0	0	0	52	0	30	0	183	63	64	229	0
Lane Group Flow (vph)	0	0	0	58	0	33	0	273	0	71	254	0
Turn Type				custom		custom				Prot		
Protected Phases								2		1	6	
Permitted Phases				8		8						
Total Split (s)	0.0	0.0	0.0	25.0	0.0	25.0	0.0	23.0	0.0	17.0	40.0	0.0
Act Effct Green (s)				8.3		8.3		47.9		8.9	55.8	
Actuated g/C Ratio				0.13		0.13		0.74		0.14	0.86	
v/c Ratio				0.26		0.14		0.11		0.29	0.08	
Uniform Delay, d1				27.6		0.0		2.8		27.4	1.2	
Delay				25.1		9.8		3.2		29.0	0.8	
LOS				C		A		A		C	A	
Approach Delay					19.5			3.2			7.0	
Approach LOS					B			A			A	
Queue Length 50th (ft)				21		0		18		41	4	
Queue Length 95th (ft)				50		21		35		m41	m6	
Internal Link Dist (ft)		216			502			954			614	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)				100						195		
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary
Cycle Length: 65
Actuated Cycle Length: 65
Offset: 16 (25%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.29
Intersection Signal Delay: 7.1 Intersection LOS: A
Intersection Capacity Utilization 25.1% ICU Level of Service A
m Volume for 95th percentile queue is metered by upstream signal.

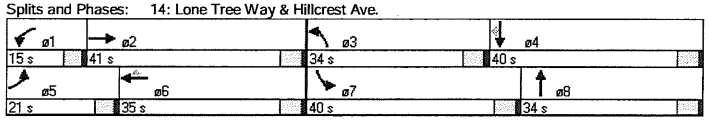
Splits and Phases: 13: Vista Grande & Hillcrest Avenue



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	5024	0	1770	5085	1583	1770	3329	0	*1900	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	5024	0	1769	5085	1583	1770	3329	0	3422	3539	1583
Satd. Flow (RTOR)		9				512		51				144
Volume (vph)	282	1426	109	69	1220	663	111	67	38	848	117	125
Lane Group Flow (vph)	332	1806	0	74	1312	713	150	142	0	975	134	144
Turn Type	Prot			Prot		Perm	Prot			Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases						6						4
Total Split (s)	21.0	41.0	0.0	15.0	35.0	35.0	34.0	34.0	0.0	40.0	40.0	40.0
Act Effct Green (s)	17.9	58.1		10.9	48.8	48.8	19.1	14.1		37.1	32.1	32.1
Actuated g/C Ratio	0.14	0.45		0.08	0.38	0.38	0.15	0.11		0.29	0.25	0.25
v/c Ratio	1.36	0.80		0.50	0.69	0.78	0.58	0.35		1.80	0.15	0.29
Uniform Delay, d1	56.0	31.6		58.2	34.2	8.8	51.7	34.0		46.5	38.3	0.0
Delay	168.7	27.3		43.9	44.6	23.8	55.5	27.9		255.4	38.3	5.8
LOS	F	C		D	D	C	E	C		F	D	A
Approach Delay		49.2			37.5			42.1			203.5	
Approach LOS		D			D			D			F	
Queue Length 50th (ft)	~378	167		56	302	270	130	0		~636	47	0
Queue Length 95th (ft)	m#252	m439		118	#521	#376	136	0		#733	68	46
Internal Link Dist (ft)		945			1420			712			1758	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	350			210		210	195			855		
50th Bay Block Time %	38%				28%	23%						
95th Bay Block Time %		7%			56%	19%						
Queuing Penalty (veh)	113	11			31	93						

Intersection Summary
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 50 (38%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.80
Intersection Signal Delay: 78.1 Intersection LOS: E
Intersection Capacity Utilization 91.0% ICU Level of Service E
* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 14: Lone Tree Way & Hillcrest Ave.

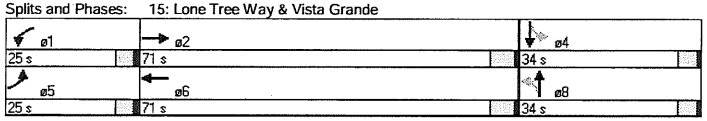


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	5056	0	1770	5065	0	1770	1632	0	1770	1645	0
Flt Permitted	0.950			0.950			0.702			0.480		
Satd. Flow (perm)	1770	5056	0	1769	5065	0	1308	1632	0	894	1645	0
Satd. Flow (RTOR)		6			5			148			49	
Volume (vph)	46	2075	77	127	1783	55	51	27	130	40	10	35
Lane Group Flow (vph)	51	2392	0	137	1976	0	58	179	0	56	63	0
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		
Total Split (s)	25.0	71.0	0.0	25.0	71.0	0.0	34.0	34.0	0.0	34.0	34.0	0.0
Act Effct Green (s)	10.7	89.9		16.6	97.9		14.5	14.5		14.5	14.5	
Actuated g/C Ratio	0.08	0.69		0.13	0.75		0.11	0.11		0.11	0.11	
v/c Ratio	0.35	0.68		0.61	0.52		0.40	0.57		0.56	0.28	
Uniform Delay, d1	57.5	11.7		53.6	6.8		53.7	9.1		54.7	11.5	
Delay	60.5	6.9		49.8	5.9		51.9	12.4		53.4	18.2	
LOS	E	A		D	A		D	B		D	B	
Approach Delay		8.0			8.7			22.1			34.8	
Approach LOS		A			A			C			C	
Queue Length 50th (ft)	45	120		122	97		46	24		46	11	
Queue Length 95th (ft)	m46	m107		180	233		85	88		68	33	
Internal Link Dist (ft)		1420			1055			786			614	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	200			200			130			100		
50th Bay Block Time %		2%										
95th Bay Block Time %					6%							
Queuing Penalty (veh)					4							

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 98 (75%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.68
Intersection Signal Delay: 9.6 Intersection LOS: A
Intersection Capacity Utilization 74.7% ICU Level of Service C
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 15: Lone Tree Way & Vista Grande

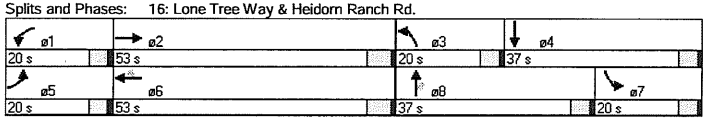


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	5065	0	1770	4806	1362	3433	1863	1583	1770	1863	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	5065	0	1770	4806	1362	3433	1863	1583	1770	1863	0
Satd. Flow (RTOR)		3				2			46			
Volume (vph)	3	2153	52	30	1855	8	84	1	23	9	0	0
Lane Group Flow (vph)	3	2250	0	34	2108	9	168	2	46	19	0	0
Turn Type	Prot			Prot		Perm	Prot		Perm	Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases						6			8			
Total Split (s)	20.0	53.0	0.0	20.0	53.0	53.0	20.0	37.0	37.0	20.0	37.0	0.0
Act Effct Green (s)	7.4	99.0		10.5	105.6	105.6	16.1	10.7	10.7	9.4		
Actuated g/C Ratio	0.06	0.76		0.08	0.81	0.81	0.12	0.08	0.08	0.07		
v/c Ratio	0.03	0.58		0.24	0.54	0.01	0.39	0.01	0.27	0.15		
Uniform Delay, d1	62.3	8.8		58.6	6.4	2.8	49.9	55.0	0.0	60.5		
Delay	67.7	1.6		69.2	2.4	1.5	51.0	56.0	16.1	56.2		
LOS	E	A		E	A	A	D	E	B	E		
Approach Delay		1.7			3.5			43.6			56.2	
Approach LOS		A			A			D			E	
Queue Length 50th (ft)	3	40		29	68	1	70	2	0	15		
Queue Length 95th (ft)	m4	56		m48	99	m1	52	6	6	21		
Internal Link Dist (ft)		1055			905			972			316	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	185			400		95	200		200	50		
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 114 (88%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.58
Intersection Signal Delay: 4.7 Intersection LOS: A
Intersection Capacity Utilization 62.0% ICU Level of Service B
m Volume for 95th percentile queue is metered by upstream signal.

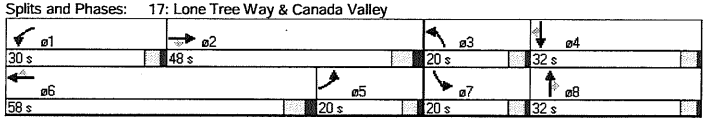
Splits and Phases: 16: Lone Tree Way & Heidorn Ranch Rd.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	5085	1583	3433	5085	1583	3433	1671	1504	1770	1863	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	5085	1583	3433	5085	1583	3433	1671	1504	1770	1863	1583
Satd. Flow (RTOR)			103			409		21	233			134
Volume (vph)	189	1919	100	354	1613	376	121	81	209	470	78	121
Lane Group Flow (vph)	195	1978	103	385	1753	409	175	187	233	522	87	134
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Total Split (s)	20.0	48.0	48.0	30.0	58.0	58.0	20.0	32.0	32.0	20.0	32.0	32.0
Act Effct Green (s)	17.0	63.7	63.7	19.4	66.1	66.1	11.9	17.9	17.9	17.0	23.1	23.1
Actuated g/C Ratio	0.13	0.49	0.49	0.15	0.51	0.51	0.09	0.14	0.14	0.13	0.18	0.18
v/c Ratio	0.84	0.79	0.12	0.75	0.68	0.41	0.56	0.75	0.57	2.26	0.26	0.34
Uniform Delay, d1	55.2	27.7	0.0	53.0	24.0	0.0	56.5	47.7	0.0	56.5	46.2	0.0
Delay	63.2	26.9	1.8	52.6	25.0	2.0	56.2	46.9	5.8	308.8	45.6	7.1
LOS	E	C	A	D	C	A	E	D	A	F	D	A
Approach Delay		28.8			25.4			33.5			223.5	
Approach LOS		C			C			C			F	
Queue Length 50th (ft)	171	510	0	162	393	0	74	144	0	~711	64	0
Queue Length 95th (ft)	#291	#704	16	208	505	57	82	154	13	#932	111	55
Internal Link Dist (ft)		905			760			542			1064	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	320		630	400		350	150			170		170
50th Bay Block Time %		10%								74%		
95th Bay Block Time %		16%			11%			3%		80%		
Queuing Penalty (veh)		25			21			3		170		

Intersection Summary
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 87 (67%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 2.26
Intersection Signal Delay: 51.4 Intersection LOS: D
Intersection Capacity Utilization 103.8% ICU Level of Service F
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

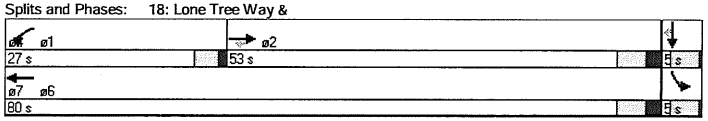
Splits and Phases: 17: Lone Tree Way & Canada Valley



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	0	5085	1583	3433	5085	0	0	0	0	1681	1681	1583
Flt Permitted				0.950						0.950	0.950	
Satd. Flow (perm)	0	5085	1583	3433	5085	0	0	0	0	1681	1681	1583
Satd. Flow (RTOR)			291									17
Volume (vph)	0	1448	1042	273	2415	0	0	0	0	111	0	104
Lane Group Flow (vph)	0	1684	1212	314	2776	0	0	0	0	62	61	116
Turn Type			Perm	Prot						Prot		Perm
Protected Phases		2		1	6					7	4	
Permitted Phases			2									4
Total Split (s)	0.0	53.0	53.0	27.0	80.0	0.0	0.0	0.0	0.0	5.0	5.0	5.0
Act Effct Green (s)		60.5	60.5	13.5	77.0					2.0	2.0	2.0
Actuated g/C Ratio		0.71	0.71	0.16	0.91					0.02	0.02	0.02
v/c Ratio		0.47	1.00	0.57	0.60					1.55	1.52	2.15
Uniform Delay, d1		5.3	9.3	33.1	0.8					41.5	41.5	28.4
Delay		5.6	36.2	32.7	0.9					248.2	244.7	301.1
LOS		A	D	C	A					F	F	F
Approach Delay		18.4			4.1						273.0	
Approach LOS		B			A						F	
Queue Length 50th (ft)		119	~459	80	31					~50	~48	~92
Queue Length 95th (ft)		160	#833	111	35					#131	#131	#196
Internal Link Dist (ft)		760			760			536			445	
50th Up Block Time (%)												
95th Up Block Time (%)			16%									
Turn Bay Length (ft)				310						280		
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)			97									

Intersection Summary
Cycle Length: 85
Actuated Cycle Length: 85
Offset: 34 (40%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 2.15
Intersection Signal Delay: 21.1 Intersection LOS: C
Intersection Capacity Utilization 97.4% ICU Level of Service E
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 18: Lone Tree Way &

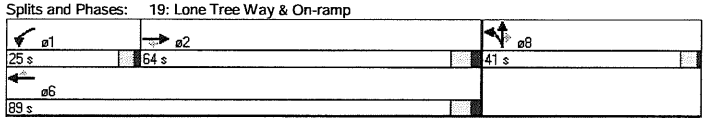


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	0	5085	1583	1770	5085	1583	1681	1681	1583	0	0	0
Flt Permitted				0.950			0.950	0.950				
Satd. Flow (perm)	0	5085	1583	1770	5085	1583	1681	1681	1583	0	0	0
Satd. Flow (RTOR)			85			130			244			
Volume (vph)	0	1476	83	24	1569	114	1117	0	316	0	0	0
Lane Group Flow (vph)	0	1736	98	27	1783	130	1270	1269	718	0	0	0
Turn Type			Perm	Prot		Perm	Split		Perm			
Protected Phases		2		1	6		8	8				
Permitted Phases			2			6			8			
Total Split (s)	0.0	64.0	64.0	25.0	89.0	89.0	41.0	41.0	41.0	0.0	0.0	0.0
Act Effct Green (s)		79.2	79.2	7.4	86.1	86.1	38.0	38.0	38.0			
Actuated g/C Ratio		0.61	0.61	0.06	0.66	0.66	0.29	0.29	0.29			
v/c Ratio		0.56	0.10	0.27	0.53	0.12	2.59	2.58	1.13			
Uniform Delay, d1		16.1	1.4	60.5	11.5	0.0	46.0	46.0	28.3			
Delay		15.9	3.4	58.2	11.6	1.3	335.2	335.0	92.3			
LOS		B	A	E	B	A	F	F	F			
Approach Delay		15.3			11.5			281.6				
Approach LOS		B			B			F				
Queue Length 50th (ft)		323	4	22	265	0	~1887	~1886	~547			
Queue Length 95th (ft)		353	26	52	291	20	#826	#826	128			
Internal Link Dist (ft)		760			620			935			1156	
50th Up Block Time (%)							51%	51%				
95th Up Block Time (%)												
Turn Bay Length (ft)			240	280		250	1000					
50th Bay Block Time %		12%					47%	47%				
95th Bay Block Time %		15%			3%							
Queuing Penalty (veh)		12					301	301				

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 10 (8%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 2.59
Intersection Signal Delay: 137.6 Intersection LOS: F
Intersection Capacity Utilization 111.4% ICU Level of Service G
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 19: Lone Tree Way & On-ramp

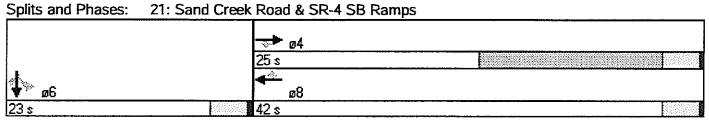


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	0	3539	1583	0	3539	1583	0	0	0	1681	1610	1504
Flt Permitted										0.950	0.950	
Satd. Flow (perm)	0	3539	1583	0	3539	1583	0	0	0	1681	1610	1504
Satd. Flow (RTOR)			16			166						47
Volume (vph)	0	39	14	0	40	149	0	0	0	696	0	42
Lane Group Flow (vph)	0	43	16	0	44	166	0	0	0	387	386	47
Turn Type			Perm			Perm				Perm		Perm
Protected Phases		4			8						6	
Permitted Phases			4			8				6		6
Total Split (s)	0.0	25.0	25.0	0.0	42.0	42.0	0.0	0.0	0.0	23.0	23.0	23.0
Act Effct Green (s)		40.1	40.1		40.1	40.1				18.9	18.9	18.9
Actuated g/C Ratio		0.62	0.62		0.62	0.62				0.29	0.29	0.29
v/c Ratio		0.02	0.02		0.02	0.16				0.79	0.82	0.10
Uniform Delay, d1		4.8	0.0		4.8	0.0				21.2	21.5	0.0
Delay		5.3	2.8		4.0	0.7				25.0	27.0	5.9
LOS		A	A		A	A				C	C	A
Approach Delay		4.6			1.4						24.9	
Approach LOS		A			A						C	
Queue Length 50th (ft)		3	0		2	0				143	150	0
Queue Length 95th (ft)		8	6		5	0				#273	#294	21
Internal Link Dist (ft)		1483			767			374			330	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)												
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 58 (89%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.82
Intersection Signal Delay: 19.2 Intersection LOS: B
Intersection Capacity Utilization 31.9% ICU Level of Service A
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 21: Sand Creek Road & SR-4 SB Ramps

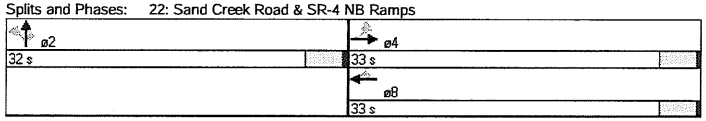


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	3433	3539	0	0	3539	1583	1681	1441	1504	0	0	0
Flt Permitted	0.628						0.950					
Satd. Flow (perm)	2269	3539	0	0	3539	1583	1681	1441	1504	0	0	0
Satd. Flow (RTOR)						517		113	113			
Volume (vph)	23	713	0	0	177	465	13	0	264	0	0	0
Lane Group Flow (vph)	26	792	0	0	197	517	14	146	147	0	0	0
Turn Type	Perm					Perm	Perm		Perm			
Protected Phases		4			8			2				
Permitted Phases	4					8	2		2			
Total Split (s)	33.0	33.0	0.0	0.0	33.0	33.0	32.0	32.0	32.0	0.0	0.0	0.0
Act Effct Green (s)	50.4	50.4			50.4	50.4	8.6	8.6	8.6			
Actuated g/C Ratio	0.78	0.78			0.78	0.78	0.13	0.13	0.13			
v/c Ratio	0.01	0.29			0.07	0.38	0.06	0.51	0.50			
Uniform Delay, d1	1.7	2.1			1.7	0.0	24.6	5.7	5.8			
Delay	0.1	0.2			2.1	0.3	23.1	8.7	8.8			
LOS	A	A			A	A	C	A	A			
Approach Delay		0.2			0.8			9.4				
Approach LOS		A			A			A				
Queue Length 50th (ft)	0	1			5	0	5	13	12			
Queue Length 95th (ft)	m0	m2			16	20	18	60	57			
Internal Link Dist (ft)		767			541			321			323	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)												
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 49 (75%), Referenced to phase 4:EBTL, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.51
Intersection Signal Delay: 2.0 Intersection LOS: A
Intersection Capacity Utilization 48.7% ICU Level of Service A
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 22: Sand Creek Road & SR-4 NB Ramps

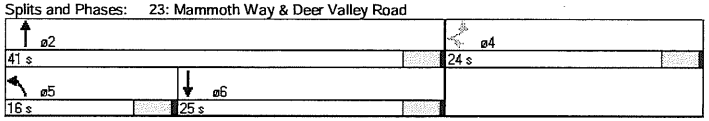


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	0	1583	0	0	0	1770	3539	0	0	3518	0
Flt Permitted	0.950						0.950					
Satd. Flow (perm)	1770	0	1583	0	0	0	1770	3539	0	0	3518	0
Satd. Flow (RTOR)			10								6	
Volume (vph)	21	0	9	0	0	0	38	791	0	0	646	25
Lane Group Flow (vph)	23	0	10	0	0	0	42	879	0	0	746	0
Turn Type	custom		custom				Prot					
Protected Phases							5	2			6	
Permitted Phases	4		4									
Total Split (s)	24.0	0.0	24.0	0.0	0.0	0.0	16.0	41.0	0.0	0.0	25.0	0.0
Act Effct Green (s)	21.0		21.0				13.0	38.0			22.0	
Actuated g/C Ratio	0.32		0.32				0.20	0.58			0.34	
v/c Ratio	0.04		0.02				0.12	0.42			0.62	
Uniform Delay, d1	15.0		0.0				21.3	7.5			17.8	
Delay	15.3		8.8				15.6	14.7			15.5	
LOS	B		A				B	B			B	
Approach Delay		13.3						14.8			15.5	
Approach LOS		B						B			B	
Queue Length 50th (ft)	6		0				14	180			66	
Queue Length 95th (ft)	20		9				41	223			155	
Internal Link Dist (ft)		395			329			946			970	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)												
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 65
Offset: 16 (25%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Control Type: Pretimed
Maximum v/c Ratio: 0.62
Intersection Signal Delay: 15.1 Intersection LOS: B
Intersection Capacity Utilization 34.3% ICU Level of Service A

Splits and Phases: 23: Mammoth Way & Deer Valley Road



NEAR-TERM + PROJECT TRAFFIC CONDITIONS (TRAFFIX & SYNCRHO)

Antioch Aviano Adult Community TIA
Near Term + Project AM

Impact Analysis Report
Level Of Service

Intersection	Base Del/ LOS Veh	V/ C	Future Del/ LOS Veh	V/ C	Change in
# 1 Lone Tree Way/Deer Valley Rd	A xxxxx	0.536	D xxxxx	0.815	+ 0.279 V/C
# 2 Deer Valley Road/Marita Drive	A xxxxx	0.325	A xxxxx	0.397	+ 0.072 V/C
# 3 Deer Valley Road/Prewitt Ranch	A xxxxx	0.504	B xxxxx	0.600	+ 0.096 V/C
# 4 Deer Valley Road/Wellness Way	A xxxxx	0.338	A xxxxx	0.484	+ 0.145 V/C
# 5 Deer Valley Road/Kaiser	A xxxxx	0.247	A xxxxx	0.353	+ 0.106 V/C
# 6 Deer Valley Road/Sand Creek Ro	A xxxxx	0.262	A xxxxx	0.341	+ 0.078 V/C
# 7 Kaiser/Sand Creek Road	xxxxx	0.000	A xxxxx	0.021	+ 0.021 V/C
# 8 PARK/Sand Creek Road	xxxxx	0.000	A xxxxx	0.256	+ 0.256 V/C
# 9 Edgewood South Access/Sand Cre	xxxxx	0.000	A xxxxx	0.133	+ 0.133 V/C
# 10 Hillcrest Avenue/Sand Creek Ro	xxxxx	0.000	A xxxxx	0.259	+ 0.259 V/C
# 11 Hillcrest Avenue/East Edgewood	xxxxx	0.000	A xxxxx	0.193	+ 0.193 V/C
# 12 Hillcrest Ave/Prewett Ranch Dr	A xxxxx	0.164	A xxxxx	0.289	+ 0.125 V/C
# 13 Hillcrest Avenue/Vista Grande	A xxxxx	0.106	A xxxxx	0.213	+ 0.108 V/C
# 14 Lone Tree Way/Hillcrest Avenue	A xxxxx	0.538	B xxxxx	0.667	+ 0.128 V/C
# 15 Lone Tree Way/Vista Grande Dri	A xxxxx	0.390	A xxxxx	0.476	+ 0.086 V/C
# 16 Lone Tree Way/Heidorn Ranch Ro	A xxxxx	0.321	A xxxxx	0.374	+ 0.053 V/C
# 17 Lone Tree Way/Canada Valley Ro	A xxxxx	0.559	B xxxxx	0.695	+ 0.136 V/C
# 18 Lone Tree Way/SB SR-4 Bypass	A xxxxx	0.325	A xxxxx	0.420	+ 0.095 V/C
# 19 Lone Tree Way/NB SR-4 Bypass (	A xxxxx	0.464	A xxxxx	0.539	+ 0.074 V/C
# 20 Heidorn Ranch Road/Sand Creek	xxxxx	0.000	xxxxx	0.000	+ 0.000 V/C
# 21 SR-4 Bypass SB Ramps/Sand Cree	A xxxxx	0.132	A xxxxx	0.160	+ 0.028 V/C
# 22 SR-4 Bypass NB Ramps/Sand Cree	A xxxxx	0.340	A xxxxx	0.393	+ 0.054 V/C
# 23 Mammoth/Deer Valley	A xxxxx	0.175	A xxxxx	0.239	+ 0.064 V/C

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Antioch Aviano Adult Community TIA
Near Term + Project AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #1 Lone Tree Way/Deer Valley Rd

Cycle (sec): 130 Critical Vol./Cap.(X): 0.815
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 123 Level Of Service: D

Street Name:	Deer Valley Road						Lone Tree Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	15	32	0	15	32	0	15	32	0	15	32	0
Lanes:	2	0 2	0 1	2	0 1	1 0	1	0 2	0 1	1	0 2	0 1
Volume Module:												
Base Vol:	220	279	98	435	435	19	59	828	163	153	892	197
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	220	279	98	435	435	19	59	828	163	153	892	197
Added Vol:	74	39	135	99	44	0	0	377	66	136	364	78
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	294	318	233	534	479	19	59	1205	229	289	1256	275
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	294	318	233	534	479	19	59	1205	229	289	1256	275
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	294	318	233	534	479	19	59	1205	229	289	1256	275
RTOR Reduct:	0	0	233	0	0	0	0	0	162	0	0	275
RTOR Vol:	294	318	0	534	479	19	59	1205	67	289	1256	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	294	318	0	534	479	19	59	1205	67	289	1256	0
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	2.00	1.00	2.00	1.92	0.08	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	3000	3300	1650	3000	3174	126	1650	3300	1650	1650	3300	1650
Capacity Analysis Module:												
Vol/Sat:	0.10	0.10	0.00	0.18	0.15	0.15	0.04	0.37	0.04	0.18	0.38	0.00
Crit Volume:		159		267				603		289		
Crit Moves:		****		****				****		****		

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Antioch Aviano Adult Community TIA
Near Term + Project AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #2 Deer Valley Road/Marita Drive

Cycle (sec): 100 Critical Vol./Cap.(X): 0.397
Loss Time (sec): 3 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 17 Level Of Service: A

Street Name:	Deer Valley Road									Marita Drive		
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 1	1 0	1	0 1	1 0	1	0 0	1 0	1	0 1	1 0
Volume Module:												
Base Vol:	65	610	33	195	570	13	18	10	20	12	1	15
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	65	610	33	195	570	13	18	10	20	12	1	15
Added Vol:	0	248	0	0	247	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	65	858	33	195	817	13	18	10	20	12	1	15
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	65	858	33	195	817	13	18	10	20	12	1	15
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	65	858	33	195	817	13	18	10	20	12	1	15
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Vol:	65	858	33	195	817	13	18	10	20	12	1	15
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	65	858	33	195	817	13	18	10	20	12	1	15
Saturation Flow Module:												
Sat/Lane:	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.93	0.07	1.00	1.97	0.03	1.00	0.33	0.67	1.00	0.06	0.94
Final Sat.:	1720	3313	127	1720	3386	54	1720	573	1147	1720	108	1613
Capacity Analysis Module:												
Vol/Sat:	0.04	0.26	0.26	0.11	0.24	0.24	0.01	0.02	0.02	0.01	0.01	0.01
Crit Volume:		446		195				30		12		
Crit Moves:		****		****				****		****		

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Antioch Aviano Adult Community TIA
Near Term + Project AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #3 Deer Valley Road/Prewitt Ranch Drive

Cycle (sec): 100 Critical Vol./Cap.(X): 0.600
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 57 Level Of Service: B

Street Name:	Deer Valley Road						Prewitt Ranch Drive					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 1	1 0	1	0 1	1 0	1	0 0	1 0	1	0 1	1 0
Volume Module:												
Base Vol:	37	339	76	135	367	117	79	205	67	41	230	180
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	37	339	76	135	367	117	79	205	67	41	230	180
Added Vol:	0	189	0	5	220	22	46	0	0	0	0	13
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	37	528	76	140	587	139	125	205	67	41	230	193
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	37	528	76	140	587	139	125	205	67	41	230	193
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	37	528	76	140	587	139	125	205	67	41	230	193
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Vol:	37	528	76	140	587	139	125	205	67	41	230	193
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	37	528	76	140	587	139	125	205	67	41	230	193
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.75	0.25	1.00	1.62	0.38	1.00	0.75	0.25	1.00	0.54	0.46
Final Sat.:	1650	2885	415	1650	2668	632	1650	1244	406	1650	897	753
Capacity Analysis Module:												
Vol/Sat:	0.02	0.18	0.18	0.08	0.22	0.22	0.08	0.16	0.16	0.02	0.26	0.26
Crit Volume:		302		140			125				423	
Crit Moves:		****		****			****				****	

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Antioch Aviano Adult Community TIA
Near Term + Project AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #4 Deer Valley Road/Wellness Way

Cycle (sec): 100 Critical Vol./Cap.(X): 0.484
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 36 Level Of Service: A

Street Name:	Deer Valley Road						Wellness Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 2	0 1	1	0 1	0 0	0	0 0	0 0	1	0 0	0 1
Volume Module:												
Base Vol:	0	416	0	0	558	0	0	0	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	416	0	0	558	0	0	0	0	0	0	0
Added Vol:	0	128	2	20	200	0	0	0	0	5	0	60
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	544	2	20	758	0	0	0	0	5	0	60
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	544	2	20	758	0	0	0	0	5	0	60
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	544	2	20	758	0	0	0	0	5	0	60
RTOR Reduct:	0	0	2	0	0	0	0	0	0	0	0	20
RTOR Vol:	0	544	0	20	758	0	0	0	0	5	0	40
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	544	0	20	758	0	0	0	0	5	0	40
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Final Sat.:	1650	3300	1650	1650	1650	0	0	0	0	1650	0	1650
Capacity Analysis Module:												
Vol/Sat:	0.00	0.16	0.00	0.01	0.46	0.00	0.00	0.00	0.00	0.00	0.00	0.02
Crit Volume:	0				758			0				40
Crit Moves:	****				****							****

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Antioch Aviano Adult Community TIA
Near Term + Project AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #5 Deer Valley Road/Kaiser

Cycle (sec): 100 Critical Vol./Cap.(X): 0.353
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 29 Level Of Service: A

Street Name:	Deer Valley Road						Kaiser					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Protected			Permitted			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0 2	0 1	1	0 1	0 0	0	0 0	0 0	1	0 0	0 1
Volume Module:												
Base Vol:	0	397	36	158	400	0	0	0	0	8	0	19
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	397	36	158	400	0	0	0	0	8	0	19
Added Vol:	0	41	35	181	23	0	0	0	0	17	0	89
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	438	71	339	423	0	0	0	0	25	0	108
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	438	71	339	423	0	0	0	0	25	0	108
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	438	71	339	423	0	0	0	0	25	0	108
RTOR Reduct:	0	0	25	0	0	0	0	0	0	0	0	108
RTOR Vol:	0	438	46	339	423	0	0	0	0	25	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	438	46	339	423	0	0	0	0	25	0	0
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	2.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Final Sat.:	0	3300	1650	1650	1650	0	0	0	0	1650	0	1650
Capacity Analysis Module:												
Vol/Sat:	0.00	0.13	0.03	0.21	0.26	0.00	0.00	0.00	0.00	0.02	0.00	0.00
Crit Volume:		219		339				0		25		
Crit Moves:		****		****						****		

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Antioch Aviano Adult Community TIA
Near Term + Project AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #6 Deer Valley Road/Sand Creek Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.341
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 28 Level Of Service: A

Street Name:	Deer Valley Road						Sand Creek Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 0	1 0	1	0 0	1 0	1	0 0	1 0	0	1 0	0 1
Volume Module:												
Base Vol:	0	433	0	0	408	0	0	0	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	433	0	0	408	0	0	0	0	0	0	0
Added Vol:	0	75	35	0	37	3	2	0	0	17	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	508	35	0	445	3	2	0	0	17	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	508	35	0	445	3	2	0	0	17	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	508	35	0	445	3	2	0	0	17	0	0
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Vol:	0	508	35	0	445	3	2	0	0	17	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	508	35	0	445	3	2	0	0	17	0	0
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.94	0.06	1.00	0.99	0.01	1.00	1.00	0.00	1.00	0.00	1.00
Final Sat.:	1650	1544	106	1650	1639	11	1650	1650	0	1650	0	1650
Capacity Analysis Module:												
Vol/Sat:	0.00	0.33	0.33	0.00	0.27	0.27	0.00	0.00	0.00	0.01	0.00	0.00
Crit Volume:		543		0			2			17		
Crit Moves:		****	****			****			****			

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Antioch Aviano Adult Community TIA
Near Term + Project AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #7 Kaiser/Sand Creek Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.021
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 19 Level Of Service: A

Street Name:	Kaiser						Sand Creek Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Protected			Protected			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0 0	0 0	1	0 0	0 1	1	0 2	0 0	0	0 2	0 1
Volume Module:												
Base Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	0	0	0	0	0
Added Vol:	0	0	0	0	0	17	35	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	0	0	17	35	0	0	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	0	0	17	35	0	0	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	0	0	17	35	0	0	0	0	0
RTOR Reduct:	0	0	0	0	0	17	0	0	0	0	0	0
RTOR Vol:	0	0	0	0	0	0	35	0	0	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	0	0	0	35	0	0	0	0	0
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	2.00	0.00	0.00	2.00	1.00
Final Sat.:	0	0	0	1650	0	1650	1650	3300	0	0	3300	1650
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00
Crit Volume:		0			0		35				0	
Crit Moves:							****					

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Antioch Aviano Adult Community TIA
Near Term + Project AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #8 PARK/Sand Creek Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.256
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 25 Level Of Service: A

Street Name:	PARK								Sand Creek Road			
Approach:	North Bound				South Bound				East Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Permitted				Protected				Protected			
Rights:	Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0	
Lanes:	0	0	0	0 0	1	0	0	0 1	1	0	2	0 0

Volume Module:													
Base Vol:	0	0	0	0	0	0	0	0	0	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	0	0	0	0	0	0
Added Vol:	0	0	0	205	0	0	0	0	0	0	0	0	422
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	205	0	0	0	0	0	0	0	0	422
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	205	0	0	0	0	0	0	0	0	422
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	205	0	0	0	0	0	0	0	0	422
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0	205
RTOR Vol:	0	0	0	205	0	0	0	0	0	0	0	0	217
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	205	0	0	0	0	0	0	0	0	217

Saturation Flow Module:													
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	2.00	0.00	0.00	2.00	1.00	
Final Sat.:	0	0	0	1650	0	1650	1650	3300	0	0	3300	1650	

Capacity Analysis Module:													
Vol/Sat:	0.00	0.00	0.00	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13
Crit Volume:			0	205				0					217
Crit Moves:				****									****

Antioch Aviano Adult Community TIA
Near Term + Project AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #9 Edgewood South Access/Sand Creek Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.133
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 26 Level Of Service: A

Street Name:	Edgewood South Access								Sand Creek Road			
Approach:	North Bound				South Bound				East Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected			
Rights:	Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0	
Lanes:	0	0	0	0 0	1	0	0	0 1	1	0	2	0 0

Volume Module:													
Base Vol:	0	0	0	0	0	0	0	0	0	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	0	0	0	0	0	0
Added Vol:	0	0	0	18	0	0	0	205	0	0	422	6	
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0	
Initial Fut:	0	0	0	18	0	0	0	205	0	0	422	6	
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
PHF Volume:	0	0	0	18	0	0	0	205	0	0	422	6	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	0	0	0	18	0	0	0	205	0	0	422	6	
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	6	
RTOR Vol:	0	0	0	18	0	0	0	205	0	0	422	0	
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
FinalVolume:	0	0	0	18	0	0	0	205	0	0	422	0	

Saturation Flow Module:													
Sat/Lane:	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	2.00	0.00	0.00	2.00	1.00	
Final Sat.:	0	0	0	1720	0	1720	1720	3440	0	0	3440	1720	

Capacity Analysis Module:													
Vol/Sat:	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.06	0.00	0.00	0.12	0.00	
Crit Volume:			0	18				0				211	
Crit Moves:				****				****				****	

Antioch Aviano Adult Community TIA
Near Term + Project AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #10 Hillcrest Avenue/Sand Creek Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.259
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 25 Level Of Service: A

Street Name:	Hillcrest Avenue								Sand Creek Road			
Approach:	North Bound				South Bound				East Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Permitted				Protected				Protected			
Rights:	Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0	
Lanes:	0	0	0	0 0	1	0	0	0 1	1	0	2	0 0

Volume Module:													
Base Vol:	0	0	0	0	0	0	0	0	0	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	0	0	0	0	0	0
Added Vol:	0	0	0	0	0	428	223	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	0	0	428	223	0	0	0	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	0	0	428	223	0	0	0	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	0	0	428	223	0	0	0	0	0	0
RTOR Reduct:	0	0	0	0	0	223	0	0	0	0	0	0	0
RTOR Vol:	0	0	0	0	0	205	223	0	0	0	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	0	0	205	223	0	0	0	0	0	0

Saturation Flow Module:													
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	2.00	0.00	0.00	2.00	1.00	
Final Sat.:	0	0	0	1650	0	1650	1650	3300	0	0	3300	1650	

Capacity Analysis Module:													
Vol/Sat:	0.00	0.00	0.00	0.00	0.00	0.12	0.14	0.00	0.00	0.00	0.00	0.00	
Crit Volume:			0			205	223				0		
Crit Moves:						****	****						

Antioch Aviano Adult Community TIA
Near Term + Project AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #11 Hillcrest Avenue/East Edgewood Access

Cycle (sec): 100 Critical Vol./Cap.(X): 0.193
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 23 Level Of Service: A

Street Name:	Hillcrest Avenue								East Edgewood Access			
Approach:	North Bound				South Bound				East Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Permitted				Protected			
Rights:	Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0	
Lanes:	1	0	2	0 0	0	0	1	1 0	1	0	0	0 1

Volume Module:													
Base Vol:	0	0	0	0	0	0	0	0	0	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	0	0	0	0	0	0
Added Vol:	0	223	0	0	429	53	78	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	223	0	0	429	53	78	0	0	0	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	223	0	0	429	53	78	0	0	0	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	223	0	0	429	53	78	0	0	0	0	0	0
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Vol:	0	223	0	0	429	53	78	0	0	0	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	223	0	0	429	53	78	0	0	0	0	0	0

Saturation Flow Module:													
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Lanes:	1.00	2.00	0.00	0.00	1.78	0.22	1.00	0.00	1.00	0.00	0.00	0.00	
Final Sat.:	1650	3300	0	0	2937	363	1650	0	1650	0	0	0	

Capacity Analysis Module:													
Vol/Sat:	0.00	0.07	0.00	0.00	0.15	0.15	0.05	0.00	0.00	0.00	0.00	0.00	
Crit Volume:	0					241	78				0		
Crit Moves:	****					****	****						

Antioch Aviano Adult Community TIA
Near Term + Project AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #12 Hillcrest Ave/Prewett Ranch Dr

Cycle (sec): 100 Critical Vol./Cap.(X): 0.289
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 32 Level Of Service: A

Street Name:	Hillcrest Ave						Prewett Dr					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 1	1 0	1	0 1	1 0	1	0 0	1 0	1	0 0	1 0
Volume Module:												
Base Vol:	0	0	0	13	0	108	121	30	0	0	47	6
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	13	0	108	121	30	0	0	47	6
Added Vol:	4	333	0	0	482	1	4	0	8	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	4	333	0	13	482	109	125	30	8	0	47	6
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	4	333	0	13	482	109	125	30	8	0	47	6
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	4	333	0	13	482	109	125	30	8	0	47	6
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Vol:	4	333	0	13	482	109	125	30	8	0	47	6
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	4	333	0	13	482	109	125	30	8	0	47	6
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	0.00	1.00	1.63	0.37	1.00	0.79	0.21	1.00	0.89	0.11
Final Sat.:	1650	3300	0	1650	2691	609	1650	1303	347	1650	1463	187
Capacity Analysis Module:												
Vol/Sat:	0.00	0.10	0.00	0.01	0.18	0.18	0.08	0.02	0.02	0.00	0.03	0.03
Crit Volume:	4					296	125					53
Crit Moves:	****					****	****					****

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Antioch Aviano Adult Community TIA
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Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #13 Hillcrest Avenue/Vista Grande Drive

Cycle (sec): 100 Critical Vol./Cap.(X): 0.213
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 24 Level Of Service: A

Street Name:	Hillcrest Avenue						Vista Grande Drive					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Protected			Permitted			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0 1	1 0	1	0 2	0 0	0	0 0	0 0	1	0 0	0 1
Volume Module:												
Base Vol:	0	80	49	55	70	0	0	0	0	55	0	56
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	80	49	55	70	0	0	0	0	55	0	56
Added Vol:	0	333	4	1	475	0	0	0	0	8	0	3
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	413	53	56	545	0	0	0	0	63	0	59
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	413	53	56	545	0	0	0	0	63	0	59
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	413	53	56	545	0	0	0	0	63	0	59
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	56
RTOR Vol:	0	413	53	56	545	0	0	0	0	63	0	3
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	413	53	56	545	0	0	0	0	63	0	3
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	1.77	0.23	1.00	2.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Final Sat.:	0	2925	375	1650	3300	0	0	0	0	1650	0	1650
Capacity Analysis Module:												
Vol/Sat:	0.00	0.14	0.14	0.03	0.17	0.00	0.00	0.00	0.00	0.04	0.00	0.00
Crit Volume:		233		56					0	63		
Crit Moves:		****		****						****		

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Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #14 Lone Tree Way/Hillcrest Avenue

Cycle (sec): 130 Critical Vol./Cap.(X): 0.667
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 68 Level Of Service: B

Street Name:	Hillcrest Avenue						Lone Tree Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 1	1 0	2	0 2	0 1	1	0 2	1 0	1	0 3	0 1
Volume Module:												
Base Vol:	45	73	9	710	83	294	171	640	17	37	857	525
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	45	73	9	710	83	294	171	640	17	37	857	525
Added Vol:	243	43	50	36	53	61	54	180	380	43	274	31
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	288	116	59	746	136	355	225	820	397	80	1131	556
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	288	116	59	746	136	355	225	820	397	80	1131	556
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	288	116	59	746	136	355	225	820	397	80	1131	556
RTOR Reduct:	0	0	0	0	0	225	0	0	0	0	0	410
RTOR Vol:	288	116	59	746	136	130	225	820	397	80	1131	146
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	288	116	59	746	136	130	225	820	397	80	1131	146
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.33	0.67	2.00	2.00	1.00	1.00	2.02	0.98	1.00	3.00	1.00
Final Sat.:	1650	2187	1113	3000	3300	1650	1650	3335	1615	1650	4950	1650
Capacity Analysis Module:												
Vol/Sat:	0.17	0.05	0.05	0.25	0.04	0.08	0.14	0.25	0.25	0.05	0.23	0.09
Crit Volume:		88		373			225				377	
Crit Moves:		****		****			****				****	

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Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #15 Lone Tree Way/Vista Grande Drive

Cycle (sec): 130 Critical Vol./Cap.(X): 0.476
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 35 Level Of Service: A

Street Name:	Vista Grande Drive						Lone Tree Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 0	1 0	1	0 0	1 0	1	0 2	1 0	1	0 2	1 0
Volume Module:												
Base Vol:	76	29	92	38	18	30	50	1280	34	42	1359	24
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	76	29	92	38	18	30	50	1280	34	42	1359	24
Added Vol:	13	0	18	7	0	3	1	207	5	8	360	6
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	89	29	110	45	18	33	51	1487	39	50	1719	30
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	89	29	110	45	18	33	51	1487	39	50	1719	30
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	89	29	110	45	18	33	51	1487	39	50	1719	30
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Vol:	89	29	110	45	18	33	51	1487	39	50	1719	30
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	89	29	110	45	18	33	51	1487	39	50	1719	30
Saturation Flow Module:												
Sat/Lane:	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.21	0.79	1.00	0.35	0.65	1.00	2.92	0.08	1.00	2.95	0.05
Final Sat.:	1720	359	1361	1720	607	1113	1720	5028	132	1720	5071	89
Capacity Analysis Module:												
Vol/Sat:	0.05	0.08	0.08	0.03	0.03	0.03	0.03	0.30	0.30	0.03	0.34	0.34
Crit Volume:		139		45			51				583	
Crit Moves:		****		****			****				****	

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Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #16 Lone Tree Way/Heidorn Ranch Road

Cycle (sec): 120 Critical Vol./Cap.(X): 0.374
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 36 Level Of Service: A

Street Name:	Heidorn Ranch Road						Lone Tree Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2	0 1	0 1	1	0 0 1	0	1	0 2	1 0	1	0 2	1 1
Volume Module:												
Base Vol:	61	1	21	8	0	1	3	1317	67	26	1317	5
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	61	1	21	8	0	1	3	1317	67	26	1317	5
Added Vol:	6	0	6	1	0	0	0	230	2	6	369	2
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	67	1	27	9	0	1	3	1547	69	32	1686	7
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	67	1	27	9	0	1	3	1547	69	32	1686	7
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	67	1	27	9	0	1	3	1547	69	32	1686	7
RTOR Reduct:	0	0	27	0	0	0	0	0	0	0	0	7
RTOR Vol:	67	1	0	9	0	1	3	1547	69	32	1686	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	67	1	0	9	0	1	3	1547	69	32	1686	0
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91
Lanes:	2.00	1.00	1.00	1.00	0.00	1.00	1.00	2.87	0.13	1.00	3.00	1.00
Final Sat.:	3000	1650	1650	1650	0	1650	1650	4739	211	1650	4950	1500
Capacity Analysis Module:												
Vol/Sat:	0.02	0.00	0.00	0.01	0.00	0.00	0.00	0.33	0.33	0.02	0.34	0.00
Crit Volume:	34			9				539		32		
Crit Moves:	****			****				****		****		

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Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #17 Lone Tree Way/Canada Valley Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.695
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 75 Level Of Service: B

Street Name:	Canada Valley Road						Lone Tree Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2	0 0	1 1	1	0 1	0 1	1	0 3	0 1	2	0 3	0 1
Volume Module:												
Base Vol:	38	33	84	333	47	53	54	1272	84	240	1203	140
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	38	33	84	333	47	53	54	1272	84	240	1203	140
Added Vol:	5	6	3	150	18	99	36	194	9	7	275	62
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	43	39	87	483	65	152	90	1466	93	247	1478	202
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	43	39	87	483	65	152	90	1466	93	247	1478	202
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	43	39	87	483	65	152	90	1466	93	247	1478	202
RTOR Reduct:	0	0	87	0	0	90	0	0	24	0	0	202
RTOR Vol:	43	39	0	483	65	62	90	1466	69	247	1478	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	43	39	0	483	65	62	90	1466	69	247	1478	0
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	0.91	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00
Lanes:	2.00	1.00	1.00	1.00	1.00	1.00	1.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3000	1650	1500	1650	1650	1650	1650	4950	1650	3000	4950	1650
Capacity Analysis Module:												
Vol/Sat:	0.01	0.02	0.00	0.29	0.04	0.04	0.05	0.30	0.04	0.08	0.30	0.00
Crit Volume:		39		483				489		124		
Crit Moves:		****		****				****		****		

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Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #18 Lone Tree Way/SB SR-4 Bypass

Cycle (sec): 100 Critical Vol./Cap.(X): 0.420
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 49 Level Of Service: A

Street Name:	SB SR-4 Bypass						Lone Tree Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Protected			Permitted			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0 0	0 0	1	1 0	0 1	0	0 3	0 1	2	0 3	0 0
Volume Module:												
Base Vol:	0	0	0	0	0	0	0	702	400	182	1609	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	702	400	182	1609	0
Added Vol:	0	0	0	74	0	63	0	283	63	37	282	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	74	0	63	0	985	463	219	1891	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	74	0	63	0	985	463	219	1891	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	74	0	63	0	985	463	219	1891	0
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Vol:	0	0	0	74	0	63	0	985	463	219	1891	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	74	0	63	0	985	463	219	1891	0
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	0.00	3.00	1.00	2.00	3.00	0.00
Final Sat.:	0	0	0	3000	0	1650	0	4950	1650	3000	4950	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.02	0.00	0.04	0.00	0.20	0.28	0.07	0.38	0.00
Crit Volume:		0				63		328			630	
Crit Moves:						****					****	

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Near Term + Project AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #19 Lone Tree Way/NB SR-4 Bypass (Jeffrey Way)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.539
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 69 Level Of Service: A

Street Name:	NB SR-4 Bypass (Jeffrey Way)						Lone Tree Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Permitted			Permitted			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	1 0	0 1	0	0 0	0 0	0	0 3	0 1	1	0 3	0 1
Volume Module:												
Base Vol:	785	0	150	0	0	0	0	691	11	12	1002	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	785	0	150	0	0	0	0	691	11	12	1002	0
Added Vol:	76	0	36	0	0	0	0	268	89	2	243	58
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	861	0	186	0	0	0	0	959	100	14	1245	58
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	861	0	186	0	0	0	0	959	100	14	1245	58
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	861	0	186	0	0	0	0	959	100	14	1245	58
RTOR Reduct:	0	0	14	0	0	0	0	0	100	0	0	0
RTOR Vol:	861	0	172	0	0	0	0	959	0	14	1245	58
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	861	0	172	0	0	0	0	959	0	14	1245	58
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	0.00	1.00	0.00	0.00	0.00	0.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	3000	0	1650	0	0	0	0	4950	1650	1650	4950	1650
Capacity Analysis Module:												
Vol/Sat:	0.29	0.00	0.10	0.00	0.00	0.00	0.00	0.19	0.00	0.01	0.25	0.04
Crit Volume:	431				0			320			415	
Crit Moves:	****										****	

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Antioch Aviano Adult Community TIA
Near Term + Project AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #20 Heidorn Ranch Road/Sand Creek Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.000
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 0 Level Of Service: xxxxxx

Street Name:	Heidorn Ranch Road						Sand Creek Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0 1	0 0	1	0 0	0 0	0	0 0	0 0	0	0 0	0 1
Volume Module:												
Base Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	0	0	0	0	0
Added Vol:	0	1	0	12	0	0	0	0	0	0	0	10
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1	0	12	0	0	0	0	0	0	0	10
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1	0	12	0	0	0	0	0	0	0	10
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1	0	12	0	0	0	0	0	0	0	10
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	10
RTOR Vol:	0	1	0	12	0	0	0	0	0	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1	0	12	0	0	0	0	0	0	0	0
Saturation Flow Module:												
Sat/Lane:	0	0	0	0	0	0	0	0	0	0	0	0
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Final Sat.:	0	0	0	0	0	0	0	0	0	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Crit Volume:		0			0			0			0	
Crit Moves:												

Antioch Aviano Adult Community TIA
Near Term + Project AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #21 SR-4 Bypass SB Ramps/Sand Creek Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.160
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 22 Level Of Service: A

Street Name:	SR-4 Bypass SB Ramps						Sand Creek Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Protected			Permitted			Protected		
Rights:	Include			Include			Include			Ignore		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0 0 0	0	1	0 1! 0	1	0	0 2	0 1	0	0 2	0 1
Volume Module:												
Base Vol:	0	0	0	395	0	0	0	0	0	0	0	239
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	395	0	0	0	0	0	0	0	239
Added Vol:	0	0	0	31	0	12	0	59	12	0	18	36
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	426	0	12	0	59	12	0	18	275
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	426	0	12	0	59	12	0	18	275
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	426	0	12	0	59	12	0	18	275
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Vol:	0	0	0	426	0	12	0	59	12	0	18	275
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	426	0	12	0	59	12	0	18	275
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	0.91	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	0.00	2.00	1.00	0.00	2.00	1.00
Final Sat.:	0	0	0	3000	0	1500	0	3300	1650	0	3300	1650
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.14	0.00	0.01	0.00	0.02	0.01	0.00	0.01	0.17
Crit Volume:		0			213			30			0	
Crit Moves:					****			****			****	

Antioch Aviano Adult Community TIA
Near Term + Project AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #22 SR-4 Bypass NB Ramps/Sand Creek Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.393
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 31 Level Of Service: A

Street Name:	SR-4 Bypass NB Ramps						Sand Creek Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 1! 0	1	0	0 0 0	0	2	0 2	0 0	0	0 2	0 1
Volume Module:												
Base Vol:	0	0	219	0	0	0	0	395	0	0	239	464
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	219	0	0	0	0	395	0	0	239	464
Added Vol:	10	0	16	0	0	0	35	55	0	0	44	64
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	10	0	235	0	0	0	35	450	0	0	283	528
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	10	0	235	0	0	0	35	450	0	0	283	528
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	10	0	235	0	0	0	35	450	0	0	283	528
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Vol:	10	0	235	0	0	0	35	450	0	0	283	528
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	10	0	235	0	0	0	35	450	0	0	283	528
Saturation Flow Module:												
Sat/Lane:	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720
Adjustment:	0.91	1.00	0.91	1.00	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.00	2.00	0.00	0.00	0.00	2.00	2.00	0.00	0.00	2.00	1.00
Final Sat.:	1563	0	3127	0	0	0	3127	3440	0	0	3440	1720
Capacity Analysis Module:												
Vol/Sat:	0.01	0.00	0.08	0.00	0.00	0.00	0.01	0.13	0.00	0.00	0.08	0.31
Crit Volume:			118		0			18				528
Crit Moves:			****				****					****

Antioch Aviano Adult Community TIA
Near Term + Project AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #23 Mammoth/Deer Valley

Cycle (sec): 100 Critical Vol./Cap.(X): 0.239
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 30 Level Of Service: A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 2	0 0	0	0 1	1 0	1	0 0	0 1	0	0 0	0 0
Volume Module:												
Base Vol:	10	366	0	0	400	20	81	0	20	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	10	366	0	0	400	20	81	0	20	0	0	0
Added Vol:	0	189	0	0	220	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	10	555	0	0	620	20	81	0	20	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	10	555	0	0	620	20	81	0	20	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	10	555	0	0	620	20	81	0	20	0	0	0
RTOR Reduct:	0	0	0	0	0	0	0	0	10	0	0	0
RTOR Vol:	10	555	0	0	620	20	81	0	10	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	10	555	0	0	620	20	81	0	10	0	0	0
Saturation Flow Module:												
Sat/Lane:	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	0.00	0.00	1.94	0.06	1.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	1720	3440	0	0	3333	108	1720	0	1720	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.01	0.16	0.00	0.00	0.19	0.19	0.05	0.00	0.01	0.00	0.00	0.00
Crit Volume:	10				320		81				0	
Crit Moves:	****				****		****					

Antioch Aviano Adult Community TIA
Near Term + Project PM

Impact Analysis Report
Level Of Service

Intersection	Base Del/ LOS Veh	V/ C	Future Del/ LOS Veh	V/ C	Change in
# 1 Lone Tree Way/Deer Valley Rd	A xxxxx	0.573	C xxxxx	0.790	+ 0.218 V/C
# 2 Deer Valley Road/Marita Drive	A xxxxx	0.270	A xxxxx	0.345	+ 0.075 V/C
# 3 Deer Valley Road/Prewitt Ranch	A xxxxx	0.384	A xxxxx	0.472	+ 0.088 V/C
# 4 Deer Valley Road/Wellness Way	A xxxxx	0.258	A xxxxx	0.339	+ 0.081 V/C
# 5 Deer Valley Road/Kaiser	A xxxxx	0.271	A xxxxx	0.355	+ 0.084 V/C
# 6 Deer Valley Road/Sand Creek Ro	A xxxxx	0.310	A xxxxx	0.371	+ 0.061 V/C
# 7 Kaiser/Sand Creek Road	xxxxx	0.000	A xxxxx	0.021	+ 0.021 V/C
# 8 PARK/Sand Creek Road	xxxxx	0.000	A xxxxx	0.048	+ 0.048 V/C
# 9 Edgewood South Access/Sand Cre	xxxxx	0.000	A xxxxx	0.031	+ 0.031 V/C
# 10 Hillcrest Avenue/Sand Creek Ro	xxxxx	0.000	A xxxxx	0.057	+ 0.057 V/C
# 11 Hillcrest Avenue/East Edgewood	xxxxx	0.000	A xxxxx	0.095	+ 0.095 V/C
# 12 Hillcrest Ave/Prewett Ranch Dr	A xxxxx	0.163	A xxxxx	0.205	+ 0.042 V/C
# 13 Hillcrest Avenue/Vista Grande	A xxxxx	0.109	A xxxxx	0.166	+ 0.056 V/C
# 14 Lone Tree Way/Hillcrest Avenue	A xxxxx	0.575	C xxxxx	0.742	+ 0.168 V/C
# 15 Lone Tree Way/Vista Grande Dri	A xxxxx	0.482	B xxxxx	0.610	+ 0.128 V/C
# 16 Lone Tree Way/Heidorn Ranch Ro	A xxxxx	0.389	A xxxxx	0.502	+ 0.113 V/C
# 17 Lone Tree Way/Canada Valley Ro	B xxxxx	0.674	D xxxxx	0.844	+ 0.170 V/C
# 18 Lone Tree Way/SB SR-4 Bypass	A xxxxx	0.411	A xxxxx	0.565	+ 0.154 V/C
# 19 Lone Tree Way/NB SR-4 Bypass (	A xxxxx	0.582	B xxxxx	0.693	+ 0.111 V/C
# 20 Heidorn Ranch Road/Sand Creek	xxxxx	0.000	xxxxx	0.000	+ 0.000 V/C
# 21 SR-4 Bypass SB Ramps/Sand Cree	A xxxxx	0.200	A xxxxx	0.244	+ 0.044 V/C
# 22 SR-4 Bypass NB Ramps/Sand Cree	A xxxxx	0.298	A xxxxx	0.362	+ 0.064 V/C
# 23 Mammoth/Deer Valley	A xxxxx	0.173	A xxxxx	0.244	+ 0.072 V/C

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Antioch Aviano Adult Community TIA
Near Term + Project PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #1 Lone Tree Way/Deer Valley Rd

Cycle (sec): 130 Critical Vol./Cap.(X): 0.790
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 109 Level Of Service: C

Street Name:	Deer Valley Road						Lone Tree Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	15	32	0	15	32	0	15	32	0	15	32	0
Lanes:	2	0 2	0 1	2	0 1	1 0	1	0 2	0 1	1	0 2	0 1
Volume Module:												
Base Vol:	221	306	115	230	302	22	122	1003	182	160	802	210
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	221	306	115	230	302	22	122	1003	182	160	802	210
Added Vol:	74	50	136	93	44	0	0	366	74	104	270	93
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	295	356	251	323	346	22	122	1369	256	264	1072	303
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	295	356	251	323	346	22	122	1369	256	264	1072	303
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	295	356	251	323	346	22	122	1369	256	264	1072	303
RTOR Reduct:	0	0	251	0	0	0	0	0	162	0	0	178
RTOR Vol:	295	356	0	323	346	22	122	1369	94	264	1072	125
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	295	356	0	323	346	22	122	1369	94	264	1072	125
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	2.00	1.00	2.00	1.88	0.12	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	3000	3300	1650	3000	3103	197	1650	3300	1650	1650	3300	1650
Capacity Analysis Module:												
Vol/Sat:	0.10	0.11	0.00	0.11	0.11	0.11	0.07	0.41	0.06	0.16	0.32	0.08
Crit Volume:		178		162				685		264		
Crit Moves:		****		****				****		****		

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Antioch Aviano Adult Community TIA
Near Term + Project PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #2 Deer Valley Road/Marita Drive

Cycle (sec): 100 Critical Vol./Cap.(X): 0.345
Loss Time (sec): 3 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 16 Level Of Service: A

Street Name:	Deer Valley Road						Marita Drive					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 1	1 0	1	0 1	1 0	1	0 0	1 0	1	0 0	1 0
Volume Module:												
Base Vol:	14	577	5	32	587	21	11	0	5	36	4	126
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	14	577	5	32	587	21	11	0	5	36	4	126
Added Vol:	0	259	0	0	221	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	14	836	5	32	808	21	11	0	5	36	4	126
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	14	836	5	32	808	21	11	0	5	36	4	126
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	14	836	5	32	808	21	11	0	5	36	4	126
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Vol:	14	836	5	32	808	21	11	0	5	36	4	126
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	14	836	5	32	808	21	11	0	5	36	4	126
Saturation Flow Module:												
Sat/Lane:	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.99	0.01	1.00	1.95	0.05	1.00	0.00	1.00	1.00	0.03	0.97
Final Sat.:	1720	3420	20	1720	3353	87	1720	0	1720	1720	53	1667
Capacity Analysis Module:												
Vol/Sat:	0.01	0.24	0.24	0.02	0.24	0.24	0.01	0.00	0.00	0.02	0.08	0.08
Crit Volume:			421		32			11				130
Crit Moves:			****		****			****				****

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Antioch Aviano Adult Community TIA
Near Term + Project PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #3 Deer Valley Road/Prewitt Ranch Drive

Cycle (sec): 100 Critical Vol./Cap.(X): 0.472
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 43 Level Of Service: A

Street Name:	Deer Valley Road						Prewitt Ranch Drive					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 1	1 0	1	0 1	1 0	1	0 0	1 0	1	0 0	1 0
Volume Module:												
Base Vol:	89	414	57	139	392	88	74	97	42	18	99	86
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	89	414	57	139	392	88	74	97	42	18	99	86
Added Vol:	0	246	0	8	200	13	10	0	0	0	0	4
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	89	660	57	147	592	101	84	97	42	18	99	90
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	89	660	57	147	592	101	84	97	42	18	99	90
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	89	660	57	147	592	101	84	97	42	18	99	90
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Vol:	89	660	57	147	592	101	84	97	42	18	99	90
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	89	660	57	147	592	101	84	97	42	18	99	90
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.84	0.16	1.00	1.71	0.29	1.00	0.70	0.30	1.00	0.52	0.48
Final Sat.:	1650	3038	262	1650	2819	481	1650	1151	499	1650	864	786
Capacity Analysis Module:												
Vol/Sat:	0.05	0.22	0.22	0.09	0.21	0.21	0.05	0.08	0.08	0.01	0.11	0.11
Crit Volume:		359		147			84				189	
Crit Moves:		****		****			****				****	

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Antioch Aviano Adult Community TIA
Near Term + Project PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #4 Deer Valley Road/Wellness Way

Cycle (sec): 100 Critical Vol./Cap.(X): 0.339
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 28 Level Of Service: A

Street Name:	Deer Valley Road						Wellness Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 2	0 1	1	0 1	0 0	0	0 0	0 0	1	0 0	0 1
Volume Module:												
Base Vol:	0	606	0	0	425	0	0	0	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	606	0	0	425	0	0	0	0	0	0	0
Added Vol:	0	205	5	69	131	0	0	0	0	3	0	41
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	811	5	69	556	0	0	0	0	3	0	41
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	811	5	69	556	0	0	0	0	3	0	41
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	811	5	69	556	0	0	0	0	3	0	41
RTOR Reduct:	0	0	3	0	0	0	0	0	0	0	0	41
RTOR Vol:	0	811	2	69	556	0	0	0	0	3	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	811	2	69	556	0	0	0	0	3	0	0
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Final Sat.:	1650	3300	1650	1650	1650	0	0	0	0	1650	0	1650
Capacity Analysis Module:												
Vol/Sat:	0.00	0.25	0.00	0.04	0.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Crit Volume:	0				556				0		3	
Crit Moves:	****				****						****	

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Antioch Aviano Adult Community TIA
Near Term + Project PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #5 Deer Valley Road/Kaiser

Cycle (sec): 100 Critical Vol./Cap.(X): 0.355
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 38 Level Of Service: A

Street Name:	Deer Valley Road						Kaiser					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Protected			Permitted			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0 2	0 1	1	0 1	0 0	0	0 0	0 0	1	0 0	0 1
Volume Module:												
Base Vol:	0	496	15	44	381	0	0	0	0	47	0	110
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	496	15	44	381	0	0	0	0	47	0	110
Added Vol:	0	32	17	87	47	0	0	0	0	35	0	178
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	528	32	131	428	0	0	0	0	82	0	288
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	528	32	131	428	0	0	0	0	82	0	288
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	528	32	131	428	0	0	0	0	82	0	288
RTOR Reduct:	0	0	32	0	0	0	0	0	0	0	0	131
RTOR Vol:	0	528	0	131	428	0	0	0	0	82	0	157
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	528	0	131	428	0	0	0	0	82	0	157
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	2.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Final Sat.:	0	3300	1650	1650	1650	0	0	0	0	1650	0	1650
Capacity Analysis Module:												
Vol/Sat:	0.00	0.16	0.00	0.08	0.26	0.00	0.00	0.00	0.00	0.05	0.00	0.10
Crit Volume:		264			428				0			157
Crit Moves:					****							****

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Antioch Aviano Adult Community TIA
Near Term + Project PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #6 Deer Valley Road/Sand Creek Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.371
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 30 Level Of Service: A

Street Name:	Deer Valley Road						Sand Creek Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 0	1 0	1	0 0	1 0	1	0 0	1 0	0	1 0	0 1
Volume Module:												
Base Vol:	0	511	0	0	428	0	0	0	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	511	0	0	428	0	0	0	0	0	0	0
Added Vol:	0	45	17	0	79	2	4	0	0	35	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	556	17	0	507	2	4	0	0	35	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	556	17	0	507	2	4	0	0	35	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	556	17	0	507	2	4	0	0	35	0	0
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Vol:	0	556	17	0	507	2	4	0	0	35	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	556	17	0	507	2	4	0	0	35	0	0
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.97	0.03	1.00	0.99	0.01	1.00	1.00	0.00	1.00	0.00	1.00
Final Sat.:	1650	1601	49	1650	1644	6	1650	1650	0	1650	0	1650
Capacity Analysis Module:												
Vol/Sat:	0.00	0.35	0.35	0.00	0.31	0.31	0.00	0.00	0.00	0.02	0.00	0.00
Crit Volume:		573			0			4			35	
Crit Moves:		****			****			****			****	

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Antioch Aviano Adult Community TIA
Near Term + Project PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #7 Kaiser/Sand Creek Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.021
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 19 Level Of Service: A

Street Name:	Kaiser						Sand Creek Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Protected			Protected			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0 0	0 0	1	0 0	0 1	1	0 2	0 0	0	0 2	0 1
Volume Module:												
Base Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	0	0	0	0	0
Added Vol:	0	0	0	0	0	35	17	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	0	0	35	17	0	0	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	0	0	35	17	0	0	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	0	0	35	17	0	0	0	0	0
RTOR Reduct:	0	0	0	0	0	17	0	0	0	0	0	0
RTOR Vol:	0	0	0	0	0	18	17	0	0	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	0	0	18	17	0	0	0	0	0
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	2.00	0.00	0.00	2.00	1.00
Final Sat.:	0	0	0	1650	0	1650	1650	3300	0	0	3300	1650
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00
Crit Volume:		0				18	17				0	
Crit Moves:						****	****					

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Antioch Aviano Adult Community TIA
Near Term + Project PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #8 PARK/Sand Creek Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.048
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 20 Level Of Service: A

Street Name:	PARK						Sand Creek Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Protected			Protected			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0 0	0 0	1	0 0	0 1	1	0 2	0 0	0	0 2	0 1
Volume Module:												
Base Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	0	0	0	0	0
Added Vol:	0	0	0	80	0	0	0	0	0	0	0	80
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	80	0	0	0	0	0	0	0	80
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	80	0	0	0	0	0	0	0	80
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	80	0	0	0	0	0	0	0	80
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	80
RTOR Vol:	0	0	0	80	0	0	0	0	0	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	80	0	0	0	0	0	0	0	0
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	2.00	0.00	0.00	2.00	1.00
Final Sat.:	0	0	0	1650	0	1650	1650	3300	0	0	3300	1650
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Crit Volume:		0			80			0			0	
Crit Moves:					****							

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Antioch Aviano Adult Community TIA
Near Term + Project PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #9 Edgewood South Access/Sand Creek Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.031
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 24 Level Of Service: A

Street Name:	Edgewood South Access						Sand Creek Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0 0	0 0	1	0 0	0 1	1	0 2	0 0	0	0 2	0 1
Volume Module:												
Base Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	0	0	0	0	0
Added Vol:	0	0	0	13	0	0	0	80	0	0	80	12
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	13	0	0	0	80	0	0	80	12
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	13	0	0	0	80	0	0	80	12
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	13	0	0	0	80	0	0	80	12
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	12
RTOR Vol:	0	0	0	13	0	0	0	80	0	0	80	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	13	0	0	0	80	0	0	80	0
Saturation Flow Module:												
Sat/Lane:	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	2.00	0.00	0.00	2.00	1.00
Final Sat.:	0	0	0	1720	0	1720	1720	3440	0	0	3440	1720
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.02	0.00	0.00	0.02	0.00
Crit Volume:		0			13			0			40	
Crit Moves:					****			****			****	

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Antioch Aviano Adult Community TIA
Near Term + Project PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #10 Hillcrest Avenue/Sand Creek Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.057
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 20 Level Of Service: A

Street Name:	Hillcrest Avenue						Sand Creek Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Protected			Protected			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0 0	0 0	1	0 0	0 1	1	0 2	0 0	0	0 2	0 1
Volume Module:												
Base Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	0	0	0	0	0
Added Vol:	0	0	0	1	0	92	93	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	1	0	92	93	0	0	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	1	0	92	93	0	0	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	1	0	92	93	0	0	0	0	0
RTOR Reduct:	0	0	0	0	0	92	0	0	0	0	0	0
RTOR Vol:	0	0	0	1	0	0	93	0	0	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	1	0	0	93	0	0	0	0	0
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	2.00	0.00	0.00	2.00	1.00
Final Sat.:	0	0	0	1650	0	1650	1650	3300	0	0	3300	1650
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00
Crit Volume:		0			1			93			0	
Crit Moves:					****			****				

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Antioch Aviano Adult Community TIA
Near Term + Project PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #11 Hillcrest Avenue/East Edgewood Access

Cycle (sec): 100 Critical Vol./Cap.(X): 0.095
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 21 Level Of Service: A

Street Name:	Hillcrest Avenue						East Edgewood Access					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Permitted			Protected			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 2	0 0	0	0 1	1 0	1	0 0	0 1	0	0 0	0 0
Volume Module:												
Base Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	0	0	0	0	0
Added Vol:	0	93	0	0	93	101	56	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	93	0	0	93	101	56	0	0	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	93	0	0	93	101	56	0	0	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	93	0	0	93	101	56	0	0	0	0	0
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Vol:	0	93	0	0	93	101	56	0	0	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	93	0	0	93	101	56	0	0	0	0	0
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	1650	3300	0	0	1650	1650	1650	0	1650	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.03	0.00	0.00	0.06	0.06	0.03	0.00	0.00	0.00	0.00	0.00
Crit Volume:	0					101	56				0	
Crit Moves:	****					****	****					

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Antioch Aviano Adult Community TIA
Near Term + Project PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #12 Hillcrest Ave/Prewett Ranch Dr

Cycle (sec): 100 Critical Vol./Cap.(X): 0.205
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 29 Level Of Service: A

Street Name:	Hillcrest Ave						Prewett Dr					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 1	1 0	1	0 1	1 0	1	0 0	1 0	1	0 0	1 0
Volume Module:												
Base Vol:	0	0	0	22	0	134	124	24	0	0	11	11
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	22	0	134	124	24	0	0	11	11
Added Vol:	2	171	0	0	238	5	2	0	2	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	2	171	0	22	238	139	126	24	2	0	11	11
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	2	171	0	22	238	139	126	24	2	0	11	11
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	2	171	0	22	238	139	126	24	2	0	11	11
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Vol:	2	171	0	22	238	139	126	24	2	0	11	11
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	2	171	0	22	238	139	126	24	2	0	11	11
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	0.00	1.00	1.26	0.74	1.00	0.92	0.08	1.00	0.50	0.50
Final Sat.:	1650	3300	0	1650	2083	1217	1650	1523	127	1650	825	825
Capacity Analysis Module:												
Vol/Sat:	0.00	0.05	0.00	0.01	0.11	0.11	0.08	0.02	0.02	0.00	0.01	0.01
Crit Volume:	2				189		126				22	
Crit Moves:	****				****		****				****	

Antioch Aviano Adult Community TIA
Near Term + Project PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #13 Hillcrest Avenue/Vista Grande Drive

Cycle (sec): 100 Critical Vol./Cap.(X): 0.166
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 22 Level Of Service: A

Street Name:	Hillcrest Avenue						Vista Grande Drive					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Protected			Permitted			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0 1	1 0	1	0 2	0 0	0	0 0	0 0	1	0 0	0 1
Volume Module:												
Base Vol:	0	80	61	60	100	0	0	0	0	50	0	29
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	80	61	60	100	0	0	0	0	50	0	29
Added Vol:	0	172	2	4	242	0	0	0	0	2	0	1
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	252	63	64	342	0	0	0	0	52	0	30
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	252	63	64	342	0	0	0	0	52	0	30
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	252	63	64	342	0	0	0	0	52	0	30
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	30
RTOR Vol:	0	252	63	64	342	0	0	0	0	52	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	252	63	64	342	0	0	0	0	52	0	0
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	1.60	0.40	1.00	2.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Final Sat.:	0	2640	660	1650	3300	0	0	0	0	1650	0	1650
Capacity Analysis Module:												
Vol/Sat:	0.00	0.10	0.10	0.04	0.10	0.00	0.00	0.00	0.00	0.03	0.00	0.00
Crit Volume:		158		64					0	52		
Crit Moves:		****		****						****		

Antioch Aviano Adult Community TIA
Near Term + Project PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #14 Lone Tree Way/Hillcrest Avenue

Cycle (sec): 130 Critical Vol./Cap.(X): 0.742
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 89 Level Of Service: C

Street Name:	Hillcrest Avenue						Lone Tree Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 1	1 0	2	0 2	0 1	1	0 2	1 0	1	0 3	0 1
Volume Module:												
Base Vol:	39	53	20	788	96	75	169	1060	18	49	927	606
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	39	53	20	788	96	75	169	1060	18	49	927	606
Added Vol:	107	24	43	60	37	50	113	366	148	61	293	57
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	146	77	63	848	133	125	282	1426	166	110	1220	663
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	146	77	63	848	133	125	282	1426	166	110	1220	663
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	146	77	63	848	133	125	282	1426	166	110	1220	663
RTOR Reduct:	0	0	0	0	0	125	0	0	0	0	0	466
RTOR Vol:	146	77	63	848	133	0	282	1426	166	110	1220	197
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	146	77	63	848	133	0	282	1426	166	110	1220	197
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.10	0.90	2.00	2.00	1.00	1.00	2.69	0.31	1.00	3.00	1.00
Final Sat.:	1650	1815	1485	3000	3300	1650	1650	4434	516	1650	4950	1650
Capacity Analysis Module:												
Vol/Sat:	0.09	0.04	0.04	0.28	0.04	0.00	0.17	0.32	0.32	0.07	0.25	0.12
Crit Volume:		70		424			282				407	
Crit Moves:		****		****			****				****	

Antioch Aviano Adult Community TIA
Near Term + Project PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #15 Lone Tree Way/Vista Grande Drive

Cycle (sec): 130 Critical Vol./Cap.(X): 0.610
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 48 Level Of Service: B

Street Name:	Vista Grande Drive						Lone Tree Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 0	1 0	1	0 0	1 0	1	0 2	1 0	1	0 2	1 0
Volume Module:												
Base Vol:	41	27	113	23	10	31	41	1626	60	104	1483	37
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	41	27	113	23	10	31	41	1626	60	104	1483	37
Added Vol:	10	0	17	17	0	4	5	472	17	23	339	18
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	51	27	130	40	10	35	46	2098	77	127	1822	55
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	51	27	130	40	10	35	46	2098	77	127	1822	55
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	51	27	130	40	10	35	46	2098	77	127	1822	55
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Vol:	51	27	130	40	10	35	46	2098	77	127	1822	55
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	51	27	130	40	10	35	46	2098	77	127	1822	55
Saturation Flow Module:												
Sat/Lane:	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.17	0.83	1.00	0.22	0.78	1.00	2.89	0.11	1.00	2.91	0.09
Final Sat.:	1720	296	1424	1720	382	1338	1720	4977	183	1720	5009	151
Capacity Analysis Module:												
Vol/Sat:	0.03	0.09	0.09	0.02	0.03	0.03	0.03	0.42	0.42	0.07	0.36	0.36
Crit Volume:			157	40					725	127		
Crit Moves:			****	****					****	****		

Antioch Aviano Adult Community TIA
Near Term + Project PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #16 Lone Tree Way/Heidorn Ranch Road

Cycle (sec): 120 Critical Vol./Cap.(X): 0.502
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 46 Level Of Service: A

Street Name:	Heidorn Ranch Road						Lone Tree Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2	0 1	0 1	1	0 0 1	0	1	0 2	1 0	1	0 2	1 1
Volume Module:												
Base Vol:	79	1	11	7	0	0	3	1679	43	18	1519	7
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	79	1	11	7	0	0	3	1679	43	18	1519	7
Added Vol:	5	0	12	2	0	0	0	498	9	12	375	1
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	84	1	23	9	0	0	3	2177	52	30	1894	8
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	84	1	23	9	0	0	3	2177	52	30	1894	8
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	84	1	23	9	0	0	3	2177	52	30	1894	8
RTOR Reduct:	0	0	23	0	0	0	0	0	0	0	0	8
RTOR Vol:	84	1	0	9	0	0	3	2177	52	30	1894	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	84	1	0	9	0	0	3	2177	52	30	1894	0
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91
Lanes:	2.00	1.00	1.00	1.00	1.00	0.00	1.00	2.93	0.07	1.00	3.00	1.00
Final Sat.:	3000	1650	1650	1650	1650	0	1650	4835	115	1650	4950	1500
Capacity Analysis Module:												
Vol/Sat:	0.03	0.00	0.00	0.01	0.00	0.00	0.00	0.45	0.45	0.02	0.38	0.00
Crit Volume:	42			9					743	30		
Crit Moves:	****			****					****	****		

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Antioch Aviano Adult Community TIA
Near Term + Project PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #17 Lone Tree Way/Canada Valley Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.844
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 146 Level Of Service: D

Street Name:	Canada Valley Road						Lone Tree Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2	0 0	1 1	1	0 1	0 1	1	0 3	0 1	2	0 3	0 1
Volume Module:												
Base Vol:	112	61	196	346	66	54	67	1551	93	343	1332	183
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	112	61	196	346	66	54	67	1551	93	343	1332	183
Added Vol:	13	20	13	124	12	67	122	389	9	11	316	193
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	125	81	209	470	78	121	189	1940	102	354	1648	376
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	125	81	209	470	78	121	189	1940	102	354	1648	376
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	125	81	209	470	78	121	189	1940	102	354	1648	376
RTOR Reduct:	0	0	195	0	0	121	0	0	69	0	0	376
RTOR Vol:	125	81	14	470	78	0	189	1940	33	354	1648	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	125	81	14	470	78	0	189	1940	33	354	1648	0
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	0.91	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00
Lanes:	2.00	1.00	1.00	1.00	1.00	1.00	1.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3000	1650	1500	1650	1650	1650	1650	4950	1650	3000	4950	1650
Capacity Analysis Module:												
Vol/Sat:	0.04	0.05	0.01	0.28	0.05	0.00	0.11	0.39	0.02	0.12	0.33	0.00
Crit Volume:		81		470				647		177		
Crit Moves:		****		****				****		****		

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Antioch Aviano Adult Community TIA
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Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #18 Lone Tree Way/SB SR-4 Bypass

Cycle (sec): 100 Critical Vol./Cap.(X): 0.565
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 134 Level Of Service: A

Street Name:	SB SR-4 Bypass						Lone Tree Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Protected			Permitted			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0 0	0 0	1	1 0	0 1	0	0 3	0 1	2	0 3	0 0
Volume Module:												
Base Vol:	0	0	0	0	0	0	0	1057	927	194	2033	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	1057	927	194	2033	0
Added Vol:	0	0	0	111	0	121	0	412	115	79	400	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	111	0	121	0	1469	1042	273	2433	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	111	0	121	0	1469	1042	273	2433	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	111	0	121	0	1469	1042	273	2433	0
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Vol:	0	0	0	111	0	121	0	1469	1042	273	2433	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	111	0	121	0	1469	1042	273	2433	0
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	0.00	3.00	1.00	2.00	3.00	0.00
Final Sat.:	0	0	0	3000	0	1650	0	4950	1650	3000	4950	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.04	0.00	0.07	0.00	0.30	0.63	0.09	0.49	0.00
Crit Volume:		0				121		490			811	
Crit Moves:						****					****	

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Antioch Aviano Adult Community TIA
Near Term + Project PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #19 Lone Tree Way/NB SR-4 Bypass (Jeffrey Way)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.693
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 180 Level Of Service: B

Street Name:	NB SR-4 Bypass (Jeffrey Way)						Lone Tree Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Permitted			Permitted			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	1 0	0 1	0	0 0	0 0	0	0 3	0 1	1	0 3	0 1
Volume Module:												
Base Vol:	1008	0	240	0	0	0	0	1055	2	20	1217	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	1008	0	240	0	0	0	0	1055	2	20	1217	0
Added Vol:	109	0	76	0	0	0	0	432	92	4	370	114
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	1117	0	316	0	0	0	0	1487	94	24	1587	114
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	1117	0	316	0	0	0	0	1487	94	24	1587	114
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	1117	0	316	0	0	0	0	1487	94	24	1587	114
RTOR Reduct:	0	0	24	0	0	0	0	0	94	0	0	0
RTOR Vol:	1117	0	292	0	0	0	0	1487	0	24	1587	114
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	1117	0	292	0	0	0	0	1487	0	24	1587	114
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	0.00	1.00	0.00	0.00	0.00	0.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	3000	0	1650	0	0	0	0	4950	1650	1650	4950	1650
Capacity Analysis Module:												
Vol/Sat:	0.37	0.00	0.18	0.00	0.00	0.00	0.00	0.30	0.00	0.01	0.32	0.07
Crit Volume:	559				0			496			529	
Crit Moves:	****										****	

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Antioch Aviano Adult Community TIA
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Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #20 Heidorn Ranch Road/Sand Creek Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.000
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 0 Level Of Service: xxxxxx

Street Name:	Heidorn Ranch Road						Sand Creek Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0 1	0 0	0	1 0	0 0	0	0 1	0 0	0	0 0	0 1
Volume Module:												
Base Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	0	0	0	0	0
Added Vol:	0	1	0	14	2	0	0	1	0	0	0	13
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1	0	14	2	0	0	1	0	0	0	13
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1	0	14	2	0	0	1	0	0	0	13
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1	0	14	2	0	0	1	0	0	0	13
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	13
RTOR Vol:	0	1	0	14	2	0	0	1	0	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1	0	14	2	0	0	1	0	0	0	0
Saturation Flow Module:												
Sat/Lane:	0	0	0	0	0	0	0	0	0	0	0	0
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Final Sat.:	0	0	0	0	0	0	0	0	0	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Crit Volume:		0			0			0			0	
Crit Moves:												

Antioch Aviano Adult Community TIA
Near Term + Project PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #21 SR-4 Bypass SB Ramps/Sand Creek Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.244
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 25 Level Of Service: A

Street Name:	SR-4 Bypass SB Ramps						Sand Creek Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Protected			Permitted			Protected		
Rights:	Include			Include			Include			Ignore		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0 0	0 0	1	0 1!	0 1	0	0 2	0 1	0	0 2	0 1
Volume Module:												
Base Vol:	0	0	0	598	0	0	0	0	0	0	0	121
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	599	0	0	0	0	0	0	0	121
Added Vol:	0	0	0	97	0	42	0	39	14	0	40	28
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	696	0	42	0	39	14	0	40	149
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	696	0	42	0	39	14	0	40	149
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	696	0	42	0	39	14	0	40	149
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Vol:	0	0	0	696	0	42	0	39	14	0	40	149
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	696	0	42	0	39	14	0	40	149
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	0.91	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	0.00	2.00	1.00	0.00	2.00	1.00
Final Sat.:	0	0	0	3000	0	1500	0	3300	1650	0	3300	1650
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.23	0.00	0.03	0.00	0.01	0.01	0.00	0.01	0.09
Crit Volume:		0		348				20			0	
Crit Moves:				****				****		****		

Antioch Aviano Adult Community TIA
Near Term + Project PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #22 SR-4 Bypass NB Ramps/Sand Creek Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.362
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 29 Level Of Service: A

Street Name:	SR-4 Bypass NB Ramps						Sand Creek Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 1!	0 1	0	0 0	0 0	2	0 2	0 0	0	0 2	0 1
Volume Module:												
Base Vol:	0	0	222	0	0	0	0	599	0	0	121	390
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	222	0	0	0	0	599	0	0	121	390
Added Vol:	13	0	42	0	0	0	23	114	0	0	56	75
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	13	0	264	0	0	0	23	713	0	0	177	465
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	13	0	264	0	0	0	23	713	0	0	177	465
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	13	0	264	0	0	0	23	713	0	0	177	465
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Vol:	13	0	264	0	0	0	23	713	0	0	177	465
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	13	0	264	0	0	0	23	713	0	0	177	465
Saturation Flow Module:												
Sat/Lane:	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720
Adjustment:	0.91	1.00	0.91	1.00	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.00	2.00	0.00	0.00	0.00	2.00	2.00	0.00	0.00	2.00	1.00
Final Sat.:	1563	0	3127	0	0	0	3127	3440	0	0	3440	1720
Capacity Analysis Module:												
Vol/Sat:	0.01	0.00	0.08	0.00	0.00	0.00	0.01	0.21	0.00	0.00	0.05	0.27
Crit Volume:			132		0		12					465
Crit Moves:			****				****					****

Antioch Aviano Adult Community TIA
Near Term + Project PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #23 Mammoth/Deer Valley

Cycle (sec): 100 Critical Vol./Cap.(X): 0.244
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 30 Level Of Service: A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 2	0 0	0	0 1	1 0	1	0 0	0 1	0	0 0	0 0
Volume Module:												
Base Vol:	38	553	0	0	451	25	21	0	9	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	38	553	0	0	451	25	21	0	9	0	0	0
Added Vol:	0	246	0	0	200	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	38	799	0	0	651	25	21	0	9	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	38	799	0	0	651	25	21	0	9	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	38	799	0	0	651	25	21	0	9	0	0	0
RTOR Reduct:	0	0	0	0	0	0	0	0	9	0	0	0
RTOR Vol:	38	799	0	0	651	25	21	0	0	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	38	799	0	0	651	25	21	0	0	0	0	0
Saturation Flow Module:												
Sat/Lane:	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	0.00	0.00	1.93	0.07	1.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	1720	3440	0	0	3313	127	1720	0	1720	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.02	0.23	0.00	0.00	0.20	0.20	0.01	0.00	0.00	0.00	0.00	0.00
Crit Volume:		400		0			21				0	
Crit Moves:		****		****			****					

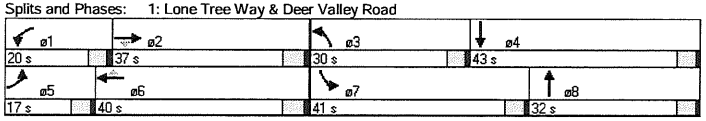
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	3433	3316	0	*2000	3518	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	3433	3316	0	1770	3518	0
Satd. Flow (RTOR)			54			65		131			3	
Volume (vph)	59	1205	229	289	1256	275	294	318	233	534	479	19
Lane Group Flow (vph)	69	1418	269	357	1551	340	342	641	0	822	766	0
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6						
Total Split (s)	17.0	37.0	37.0	20.0	40.0	40.0	30.0	32.0	0.0	41.0	43.0	0.0
Act Effct Green (s)	11.4	36.5	36.5	17.0	44.1	44.1	19.2	26.5		38.0	45.3	
Actuated g/C Ratio	0.09	0.28	0.28	0.13	0.34	0.34	0.15	0.20		0.29	0.35	
v/c Ratio	0.44	1.43	0.56	1.55	1.29	0.59	0.67	0.82		1.41	0.62	
Uniform Delay, d1	57.4	46.8	31.3	56.5	43.4	28.6	52.4	39.0		46.0	35.0	
Delay	55.8	185.6	32.8	212.1	153.5	21.3	45.8	54.2		180.2	35.8	
LOS	E	F	C	F	F	C	D	D		F	D	
Approach Delay		157.1			142.8			51.3			110.6	
Approach LOS		F			F			D			F	
Queue Length 50th (ft)	56	~867	157	~411	~932	220	99	255		~927	278	
Queue Length 95th (ft)	98	#938	234	m#513	#956	m235	124	308		#707	241	
Internal Link Dist (ft)		900			1588			664			709	
50th Up Block Time (%)										27%		
95th Up Block Time (%)		4%								4%		
Turn Bay Length (ft)	195		75	195		75	180			150		
50th Bay Block Time %		62%	40%	73%	73%	18%		26%		63%	31%	
95th Bay Block Time %		65%	51%	89%	75%	40%		20%		58%	27%	
Queuing Penalty (veh)		44	321	624	262	225		78		233	235	

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 54 (42%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.55
Intersection Signal Delay: 125.2 Intersection LOS: F
Intersection Capacity Utilization 136.7% ICU Level of Service H

* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Lone Tree Way & Deer Valley Road

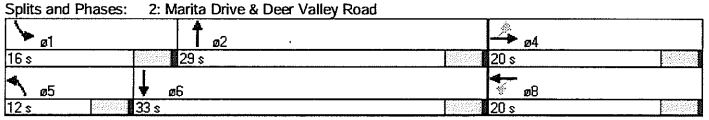


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	1676	0	1770	1598	0	1770	3518	0	1770	3532	0
Flt Permitted	0.746			0.736			0.950			0.950		
Satd. Flow (perm)	1390	1676	0	1371	1598	0	1770	3518	0	1770	3532	0
Satd. Flow (RTOR)		22			17			7			3	
Volume (vph)	18	10	20	12	1	15	65	858	33	195	817	13
Lane Group Flow (vph)	20	33	0	13	18	0	72	990	0	217	922	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Total Split (s)	20.0	20.0	0.0	20.0	20.0	0.0	12.0	29.0	0.0	16.0	33.0	0.0
Act Effct Green (s)	7.5	7.5		7.5	7.5		8.2	40.4		11.9	49.3	
Actuated g/C Ratio	0.12	0.12		0.12	0.12		0.13	0.62		0.18	0.76	
v/c Ratio	0.12	0.16		0.08	0.09		0.32	0.45		0.67	0.34	
Uniform Delay, d1	27.8	9.2		27.6	1.5		28.1	7.3		24.7	4.2	
Delay	25.4	14.8		25.2	13.3		30.0	5.2		28.5	5.3	
LOS	C	B		C	B		C	A		C	A	
Approach Delay		18.8			18.3			6.9			9.7	
Approach LOS		B			B			A			A	
Queue Length 50th (ft)	7	4		5	0		31	51		125	63	
Queue Length 95th (ft)	25	26		18	16		m57	m114		m177	m150	
Internal Link Dist (ft)		346			300			2263			664	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	40			100			175			125		
50th Bay Block Time %										5%	11%	
95th Bay Block Time %										15%	9%	
Queuing Penalty (veh)										45	21	

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 16 (25%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.67
Intersection Signal Delay: 8.7 Intersection LOS: A
Intersection Capacity Utilization 52.9% ICU Level of Service A
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Marita Drive & Deer Valley Road

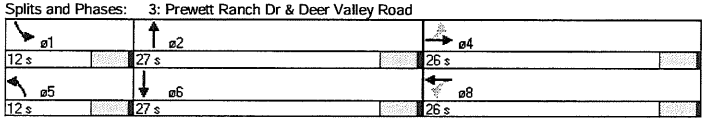


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	1794	0	1770	1736	0	1770	3472	0	1770	3437	0
Flt Permitted	0.239			0.439			0.950			0.950		
Satd. Flow (perm)	445	1794	0	818	1736	0	1770	3472	0	1770	3437	0
Satd. Flow (RTOR)		28			72			27			50	
Volume (vph)	125	205	67	41	230	193	37	528	76	140	587	139
Lane Group Flow (vph)	139	302	0	46	470	0	41	671	0	156	806	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Total Split (s)	26.0	26.0	0.0	26.0	26.0	0.0	12.0	27.0	0.0	12.0	27.0	0.0
Act Effct Green (s)	21.9	21.9		21.9	21.9		7.8	25.2		8.8	32.3	
Actuated g/C Ratio	0.34	0.34		0.34	0.34		0.12	0.39		0.14	0.50	
v/c Ratio	0.93	0.48		0.17	0.74		0.19	0.49		0.65	0.47	
Uniform Delay, d1	20.8	15.3		15.1	15.9		29.1	14.3		26.6	11.4	
Delay	57.6	15.4		15.0	17.0		31.9	4.3		21.4	16.6	
LOS	E	B		B	B		C	A		C	B	
Approach Delay		28.7			16.8			5.9			17.4	
Approach LOS		C			B			A			B	
Queue Length 50th (ft)	51	81		12	133		16	29		62	179	
Queue Length 95th (ft)	#149	145		34	#235		44	45		105	233	
Internal Link Dist (ft)		416			350			970			2263	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	155			80			140			140		
50th Bay Block Time %					30%						20%	
95th Bay Block Time %	6%	6%			45%						32%	
Queuing Penalty (veh)	8	4			17						40	

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 16 (25%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.93
Intersection Signal Delay: 16.1 Intersection LOS: B
Intersection Capacity Utilization 75.1% ICU Level of Service C
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Prewett Ranch Dr & Deer Valley Road

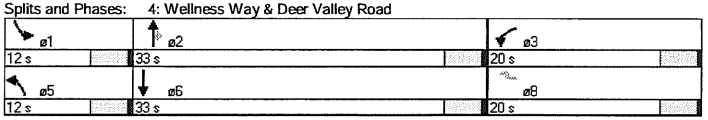


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	0	0	0	1770	0	1583	1863	3539	1583	1770	1863	0
Flt Permitted				0.950						0.950		
Satd. Flow (perm)	0	0	0	1770	0	1583	1863	3539	1583	1770	1863	0
Satd. Flow (RTOR)						67			2			
Volume (vph)	0	0	0	5	0	60	0	544	2	20	758	0
Lane Group Flow (vph)	0	0	0	6	0	67	0	604	2	22	842	0
Turn Type				Prot		custom	Prot		Perm	Prot		
Protected Phases				3			5	2		1	6	
Permitted Phases						8			2			
Total Split (s)	0.0	0.0	0.0	20.0	0.0	20.0	12.0	33.0	33.0	12.0	33.0	0.0
Act Effct Green (s)				7.3		7.3		52.1	52.1	7.4	56.7	
Actuated g/C Ratio				0.11		0.11		0.80	0.80	0.11	0.87	
v/c Ratio				0.03		0.28		0.21	0.00	0.11	0.52	
Uniform Delay, d1				27.7		0.0		3.0	0.0	29.0	1.7	
Delay				24.8		8.0		1.3	1.5	18.6	9.8	
LOS				C		A		A	A	B	A	
Approach Delay					9.4			1.3			10.0	
Approach LOS					A			A			B	
Queue Length 50th (ft)				2		0		3	0	8	241	
Queue Length 95th (ft)				11		30		26	m0	m18	315	
Internal Link Dist (ft)		172			369			465			966	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)				185					175	230		
50th Bay Block Time %											19%	
95th Bay Block Time %											33%	
Queuing Penalty (veh)											5	

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 28 (43%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.52
Intersection Signal Delay: 6.6 Intersection LOS: A
Intersection Capacity Utilization 54.3% ICU Level of Service A
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Wellness Way & Deer Valley Road

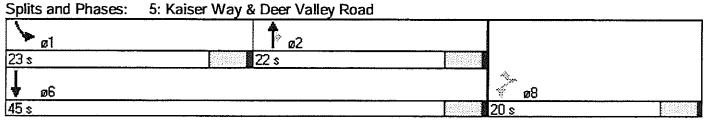


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	0	0	0	1770	0	1583	0	3539	1583	1770	1863	0
Flt Permitted				0.950						0.950		
Satd. Flow (perm)	0	0	0	1770	0	1583	0	3539	1583	1770	1863	0
Satd. Flow (RTOR)						120			79			
Volume (vph)	0	0	0	25	0	108	0	438	71	339	423	0
Lane Group Flow (vph)	0	0	0	28	0	120	0	487	79	377	470	0
Turn Type				custom		custom			Perm	Prot		
Protected Phases								2		1	6	
Permitted Phases				8		8			2			
Total Split (s)	0.0	0.0	0.0	20.0	0.0	20.0	0.0	22.0	22.0	23.0	45.0	0.0
Act Effct Green (s)				7.9		7.9		32.5	32.5	17.5	53.6	
Actuated g/C Ratio				0.12		0.12		0.50	0.50	0.27	0.82	
v/c Ratio				0.13		0.40		0.27	0.09	0.79	0.31	
Uniform Delay, d1				26.5		0.0		9.9	0.0	22.0	1.7	
Delay				24.8		6.1		10.4	2.4	25.3	0.8	
LOS				C		A		B	A	C	A	
Approach Delay					9.6			9.3			11.7	
Approach LOS					A			A			B	
Queue Length 50th (ft)				10		0		63	0	143	5	
Queue Length 95th (ft)				30		39		104	13	#254	27	
Internal Link Dist (ft)		197			305			523			465	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)						90			480	220		
50th Bay Block Time %												
95th Bay Block Time %										24%		
Queuing Penalty (veh)										55		

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 16 (25%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.79
Intersection Signal Delay: 10.6 Intersection LOS: B
Intersection Capacity Utilization 47.7% ICU Level of Service A
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: Kaiser Way & Deer Valley Road

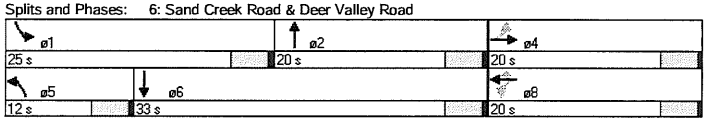


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	1863	0	0	1770	1863	1863	1844	0	1863	1861	0
Flt Permitted	0.745				0.757							
Satd. Flow (perm)	1388	1863	0	0	1410	1863	1863	1844	0	1863	1861	0
Satd. Flow (RTOR)								5			1	
Volume (vph)	2	0	0	17	0	0	0	508	35	0	445	3
Lane Group Flow (vph)	2	0	0	0	19	0	0	603	0	0	497	0
Turn Type	Perm			Perm		Perm	Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8						
Total Split (s)	20.0	20.0	0.0	20.0	20.0	20.0	12.0	20.0	0.0	25.0	33.0	0.0
Act Effct Green (s)	7.0				7.2			62.0			62.0	
Actuated g/C Ratio	0.11				0.11			0.95			0.95	
v/c Ratio	0.01				0.12			0.34			0.28	
Uniform Delay, d1	30.0				30.3			0.8			0.8	
Delay	25.0				25.8			0.9			1.2	
LOS	C				C			A			A	
Approach Delay		25.0			25.8			0.9			1.2	
Approach LOS		C			C			A			A	
Queue Length 50th (ft)	1				7			0			0	
Queue Length 95th (ft)	6				24			91			103	
Internal Link Dist (ft)		412			943			602			523	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)												
50th Bay Block Time %												
95th Bay Block Time %								12%				
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 16 (25%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.34
Intersection Signal Delay: 1.5 Intersection LOS: A
Intersection Capacity Utilization 42.1% ICU Level of Service A

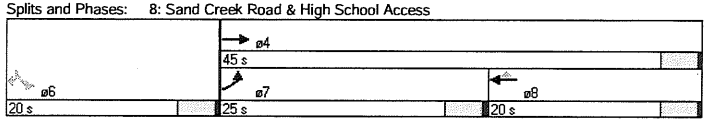
Splits and Phases: 6: Sand Creek Road & Deer Valley Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1863	3539	0	0	3539	1583	0	0	0	1770	0	1863
Flt Permitted										0.950		
Satd. Flow (perm)	1863	3539	0	0	3539	1583	0	0	0	1770	0	1863
Satd. Flow (RTOR)						1091						
Volume (vph)	0	0	0	0	0	422	0	0	0	205	0	0
Lane Group Flow (vph)	0	0	0	0	0	469	0	0	0	228	0	0
Turn Type	Prot					Perm				custom		custom
Protected Phases	7	4			8							
Permitted Phases						8				6		6
Total Split (s)	25.0	45.0	0.0	0.0	20.0	20.0	0.0	0.0	0.0	20.0	0.0	20.0
Act Effct Green (s)						45.2				13.8		
Actuated g/C Ratio						0.70				0.21		
v/c Ratio						0.33				0.61		
Uniform Delay, d1						0.0				23.1		
Delay						0.5				22.7		
LOS						A				C		
Approach Delay		0.0			0.5						22.7	
Approach LOS		A			A						C	
Queue Length 50th (ft)						0				82		
Queue Length 95th (ft)						0				137		
Internal Link Dist (ft)		2570			1012			515			1044	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)												
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary
Cycle Length: 65
Actuated Cycle Length: 65
Offset: 61 (94%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.61
Intersection Signal Delay: 7.8 Intersection LOS: A
Intersection Capacity Utilization 32.4% ICU Level of Service A

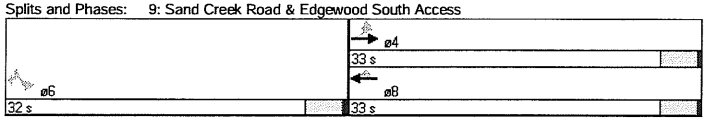
Splits and Phases: 8: Sand Creek Road & High School Access



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1863	3539	0	0	3539	1583	0	0	0	1770	0	1863
Flt Permitted										0.950		
Satd. Flow (perm)	1863	3539	0	0	3539	1583	0	0	0	1770	0	1863
Satd. Flow (RTOR)						7						
Volume (vph)	0	205	0	0	422	6	0	0	0	18	0	0
Lane Group Flow (vph)	0	228	0	0	469	7	0	0	0	20	0	0
Turn Type	Perm					Perm				custom		custom
Protected Phases		4			8							
Permitted Phases	4					8				6		6
Total Split (s)	33.0	33.0	0.0	0.0	33.0	33.0	0.0	0.0	0.0	32.0	0.0	32.0
Act Effct Green (s)		51.8			51.8	51.8				7.2		
Actuated g/C Ratio		0.80			0.80	0.80				0.11		
v/c Ratio		0.08			0.17	0.01				0.10		
Uniform Delay, d1		1.4			1.5	0.0				25.9		
Delay		0.0			1.4	1.3				25.8		
LOS		A			A	A				C		
Approach Delay		0.0			1.4						25.8	
Approach LOS		A			A						C	
Queue Length 50th (ft)		0			1	0				7		
Queue Length 95th (ft)		0			45	m1				25		
Internal Link Dist (ft)		1012			367			678			1094	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)												
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary
Cycle Length: 65
Actuated Cycle Length: 65
Offset: 49 (75%), Referenced to phase 4:EBTL and 8:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.17
Intersection Signal Delay: 1.6 Intersection LOS: A
Intersection Capacity Utilization 23.0% ICU Level of Service A
m Volume for 95th percentile queue is metered by upstream signal.

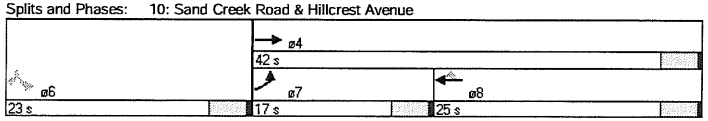
Splits and Phases: 9: Sand Creek Road & Edgewood South Access



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	3539	0	0	3539	1863	0	0	0	1863	0	1583
Flt Permitted	0.950											
Satd. Flow (perm)	1770	3539	0	0	3539	1863	0	0	0	1863	0	1583
Satd. Flow (RTOR)												1091
Volume (vph)	223	0	0	0	0	0	0	0	0	0	0	428
Lane Group Flow (vph)	248	0	0	0	0	0	0	0	0	0	0	476
Turn Type	Prot					Perm				custom		custom
Protected Phases	7	4			8							
Permitted Phases						8				6		6
Total Split (s)	17.0	42.0	0.0	0.0	25.0	25.0	0.0	0.0	0.0	23.0	0.0	23.0
Act Effct Green (s)	13.1											8.8
Actuated g/C Ratio	0.20											0.14
v/c Ratio	0.69											0.41
Uniform Delay, d1	24.1											0.0
Delay	38.9											4.9
LOS	D											A
Approach Delay		38.9			0.0						4.9	
Approach LOS		D			A						A	
Queue Length 50th (ft)	112											0
Queue Length 95th (ft)	#186											210
Internal Link Dist (ft)		367			1265			116			1953	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)												
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary
Cycle Length: 65
Actuated Cycle Length: 65
Offset: 58 (89%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.69
Intersection Signal Delay: 16.5 Intersection LOS: B
Intersection Capacity Utilization 32.8% ICU Level of Service A
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

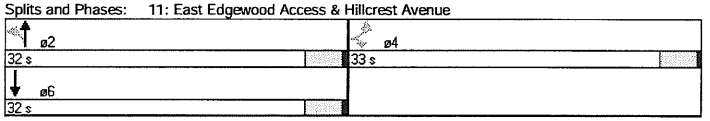
Splits and Phases: 10: Sand Creek Road & Hillcrest Avenue



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	0	1863	0	0	0	1863	3539	0	0	3479	0
Flt Permitted	0.950											
Satd. Flow (perm)	1770	0	1863	0	0	0	1863	3539	0	0	3479	0
Satd. Flow (RTOR)											26	
Volume (vph)	78	0	0	0	0	0	0	223	0	0	429	53
Lane Group Flow (vph)	87	0	0	0	0	0	0	248	0	0	536	0
Turn Type	custom		custom				Perm					
Protected Phases								2			6	
Permitted Phases	4		4				2					
Total Split (s)	33.0	0.0	33.0	0.0	0.0	0.0	32.0	32.0	0.0	0.0	32.0	0.0
Act Effct Green (s)	8.9							55.2			55.2	
Actuated g/C Ratio	0.14							0.85			0.85	
v/c Ratio	0.36							0.08			0.18	
Uniform Delay, d1	27.6							1.3			1.4	
Delay	24.9							0.0			4.2	
LOS	C							A			A	
Approach Delay		24.9						0.0			4.2	
Approach LOS		C						A			A	
Queue Length 50th (ft)	32							0			50	
Queue Length 95th (ft)	66							m0			174	
Internal Link Dist (ft)		296			524			1953			777	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)												
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary
Cycle Length: 65
Actuated Cycle Length: 65
Offset: 16 (25%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.36
Intersection Signal Delay: 5.1 Intersection LOS: A
Intersection Capacity Utilization 26.5% ICU Level of Service A
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 11: East Edgewood Access & Hillcrest Avenue

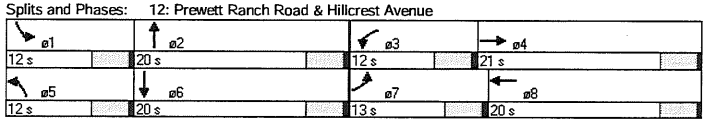


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	1803	0	1863	1829	0	1770	3539	0	1770	3440	0
Flt Permitted	0.950						0.950			0.950		
Satd. Flow (perm)	1770	1803	0	1863	1829	0	1770	3539	0	1770	3440	0
Satd. Flow (RTOR)		9			7						40	
Volume (vph)	125	30	8	0	47	6	4	333	0	13	482	109
Lane Group Flow (vph)	139	42	0	0	59	0	4	370	0	14	657	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Total Split (s)	13.0	21.0	0.0	12.0	20.0	0.0	12.0	20.0	0.0	12.0	20.0	0.0
Act Effct Green (s)	9.3	16.6			8.2		6.8	42.8		7.0	42.9	
Actuated g/C Ratio	0.14	0.26			0.13		0.10	0.66		0.11	0.66	
v/c Ratio	0.55	0.09			0.25		0.02	0.16		0.07	0.29	
Uniform Delay, d1	27.0	14.2			24.4		30.2	6.9		30.4	7.1	
Delay	26.1	12.4			22.8		33.8	4.5		19.7	7.4	
LOS	C	B			C		C	A		B	A	
Approach Delay		22.9			22.8			4.8			7.7	
Approach LOS		C			C			A			A	
Queue Length 50th (ft)	51	9			19		2	23		6	27	
Queue Length 95th (ft)	101	26			48		12	37		10	235	
Internal Link Dist (ft)		241			477			777			954	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	100											
50th Bay Block Time %												
95th Bay Block Time %	10%											
Queuing Penalty (veh)	2											

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 28 (43%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.55
Intersection Signal Delay: 9.7 — Intersection LOS: A
Intersection Capacity Utilization 39.7% — ICU Level of Service A

Splits and Phases: 12: Prewett Ranch Road & Hillcrest Avenue

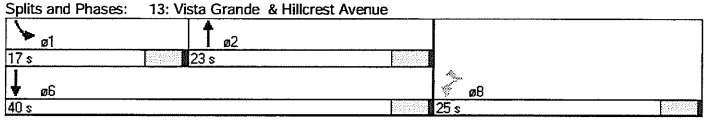


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	0	0	0	1770	0	1583	0	3479	0	1770	3539	0
Flt Permitted				0.950						0.950		
Satd. Flow (perm)	0	0	0	1770	0	1583	0	3479	0	1770	3539	0
Satd. Flow (RTOR)						66		22				
Volume (vph)	0	0	0	63	0	59	0	413	53	56	545	0
Lane Group Flow (vph)	0	0	0	70	0	66	0	518	0	62	606	0
Turn Type				custom		custom				Prot		
Protected Phases								2		1	6	
Permitted Phases				8		8						
Total Split (s)	0.0	0.0	0.0	25.0	0.0	25.0	0.0	23.0	0.0	17.0	40.0	0.0
Act Effct Green (s)				8.7		8.7		45.2		8.6	52.8	
Actuated g/C Ratio				0.13		0.13		0.70		0.13	0.81	
v/c Ratio				0.29		0.24		0.21		0.26	0.21	
Uniform Delay, d1				26.4		0.0		4.5		27.5	1.7	
Delay				24.8		7.6		6.5		19.4	4.5	
LOS				C		A		A		B	A	
Approach Delay					16.5			6.5			5.9	
Approach LOS					B			A			A	
Queue Length 50th (ft)				26		0		58		39	65	
Queue Length 95th (ft)				56		29		120		m42	123	
Internal Link Dist (ft)		216			502			954			614	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)				100						195		
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 16 (25%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.29
Intersection Signal Delay: 7.2 — Intersection LOS: A
Intersection Capacity Utilization 31.9% — ICU Level of Service A
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 13: Vista Grande & Hillcrest Avenue



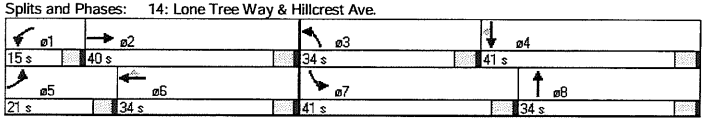
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	4811	0	1770	5085	1583	1770	3341	0	*1900	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	4811	0	1769	5085	1583	1770	3341	0	3423	3539	1583
Satd. Flow (RTOR)		94				459		65				240
Volume (vph)	225	820	397	80	1131	556	288	116	59	746	136	355
Lane Group Flow (vph)	265	1432	0	86	1216	598	389	237	0	857	156	408
Turn Type	Prot			Prot		Perm	Prot			Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases						6						4
Total Split (s)	21.0	40.0	0.0	15.0	34.0	34.0	34.0	34.0	0.0	41.0	41.0	41.0
Act Effct Green (s)	17.9	50.9		11.1	44.1	44.1	30.5	17.9		38.0	25.3	25.3
Actuated g/C Ratio	0.14	0.39		0.09	0.34	0.34	0.23	0.14		0.29	0.19	0.19
v/c Ratio	1.08	0.74		0.57	0.71	0.71	0.94	0.46		1.54	0.23	0.81
Uniform Delay, d1	56.0	31.4		57.0	37.3	7.5	48.7	37.0		46.0	44.1	19.8
Delay	68.4	29.5		67.4	32.5	12.1	65.4	38.1		211.0	42.4	19.3
LOS	E	C		E	C	B	E	D		F	D	B
Approach Delay		35.6			27.7			55.0			137.4	
Approach LOS		D			C			E			F	
Queue Length 50th (ft)	~249	342		73	250	136	337	81		~522	60	146
Queue Length 95th (ft)	m168	m307		118	#490	#452	370	71		#621	77	220
Internal Link Dist (ft)		945			1420			712			1758	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	350			210		210	195			855		
50th Bay Block Time %					11%		36%					
95th Bay Block Time %					27%	15%	34%					
Queuing Penalty (veh)					16	31	41					

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 78 (60%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.54
Intersection Signal Delay: 60.7 Intersection LOS: E
Intersection Capacity Utilization 84.6% ICU Level of Service D

* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 14: Lone Tree Way & Hillcrest Ave.

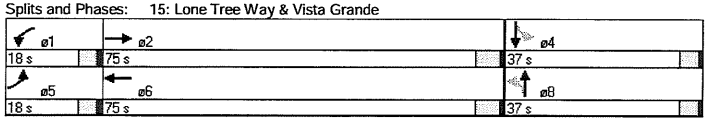


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	5062	0	1770	5070	0	1770	1641	0	1770	1682	0
Flt Permitted	0.950			0.950			0.691			0.536		
Satd. Flow (perm)	1770	5062	0	1769	5070	0	1287	1641	0	998	1682	0
Satd. Flow (RTOR)		5			3			125			46	
Volume (vph)	51	1487	39	50	1719	30	89	29	110	45	18	33
Lane Group Flow (vph)	57	1695	0	54	1880	0	101	158	0	63	71	0
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		
Total Split (s)	18.0	75.0	0.0	18.0	75.0	0.0	37.0	37.0	0.0	37.0	37.0	0.0
Act Effct Green (s)	10.9	95.8		10.9	95.8		16.4	16.4		16.4	16.4	
Actuated g/C Ratio	0.08	0.74		0.08	0.74		0.13	0.13		0.13	0.13	
v/c Ratio	0.38	0.45		0.36	0.50		0.62	0.50		0.50	0.28	
Uniform Delay, d1	57.4	7.1		57.4	7.6		53.8	10.6		53.0	17.7	
Delay	53.0	13.5		51.5	6.4		52.9	13.5		51.8	21.1	
LOS	D	B		D	A		D	B		D	C	
Approach Delay		14.8			7.7			28.9			35.5	
Approach LOS		B			A			C			D	
Queue Length 50th (ft)	46	220		46	135		82	25		50	19	
Queue Length 95th (ft)	m42	m375		96	161		133	84		73	41	
Internal Link Dist (ft)		1420			1055			786			614	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	200			200			130			100		
50th Bay Block Time %		7%										
95th Bay Block Time %		17%					6%					
Queuing Penalty (veh)		7					5					

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 55 (42%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.62
Intersection Signal Delay: 13.0 Intersection LOS: B
Intersection Capacity Utilization 59.4% ICU Level of Service A
m Volume for 95th percentile queue is metered by upstream signal.

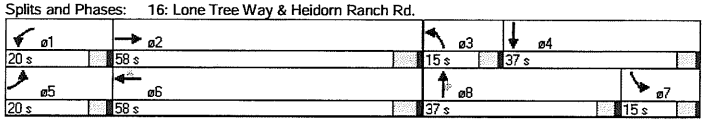
Splits and Phases: 15: Lone Tree Way & Vista Grande



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	5055	0	1770	4806	1362	3433	1863	1583	1770	1583	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	5055	0	1770	4806	1362	3433	1863	1583	1770	1583	0
Satd. Flow (RTOR)		6				2			54		238	
Volume (vph)	3	1547	69	32	1686	7	67	1	27	9	0	1
Lane Group Flow (vph)	3	1649	0	36	1916	8	134	2	54	19	2	0
Turn Type	Prot			Prot		Perm	Prot		Perm	Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases						6			8			
Total Split (s)	20.0	58.0	0.0	20.0	58.0	58.0	15.0	37.0	37.0	15.0	37.0	0.0
Act Effct Green (s)	7.4	99.5		10.6	106.1	106.1	13.0	10.1	10.1	9.4	8.1	
Actuated g/C Ratio	0.06	0.77		0.08	0.82	0.82	0.10	0.08	0.08	0.07	0.06	
v/c Ratio	0.03	0.43		0.25	0.49	0.01	0.39	0.01	0.31	0.15	0.01	
Uniform Delay, d1	62.3	7.3		58.7	6.1	2.8	54.8	55.5	0.0	59.7	0.0	
Delay	65.7	2.2		62.1	0.8	0.7	54.4	56.0	14.7	56.1	0.0	
LOS	E	A		E	A	A	D	E	B	E	A	
Approach Delay		2.3			1.9			43.1			50.8	
Approach LOS		A			A			D			D	
Queue Length 50th (ft)	2	81		31	4	0	56	2	0	15	0	
Queue Length 95th (ft)	m6	54		m58	67	m1	48	6	4	21	0	
Internal Link Dist (ft)		1055			905			972			316	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	185			400		95	200		200	50		
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 55 (42%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.49
Intersection Signal Delay: 4.4 Intersection LOS: A
Intersection Capacity Utilization 54.2% ICU Level of Service A
m Volume for 95th percentile queue is metered by upstream signal.

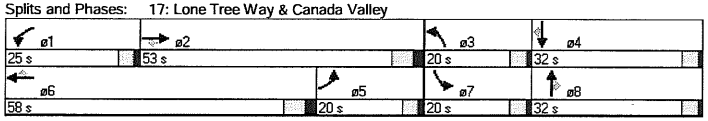
Splits and Phases: 16: Lone Tree Way & Heidorn Ranch Rd.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	5085	1583	3433	5085	1583	3433	1669	1504	1770	1863	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	5085	1583	3433	5085	1583	3433	1669	1504	1770	1863	1583
Satd. Flow (RTOR)			96			220		22	91			169
Volume (vph)	90	1466	93	247	1478	202	43	39	87	483	65	152
Lane Group Flow (vph)	93	1511	96	268	1607	220	62	92	91	537	72	169
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Total Split (s)	20.0	53.0	53.0	25.0	58.0	58.0	20.0	32.0	32.0	20.0	32.0	32.0
Act Effct Green (s)	17.0	74.9	74.9	15.5	73.5	73.5	7.7	10.6	10.6	17.0	21.6	21.6
Actuated g/C Ratio	0.13	0.58	0.58	0.12	0.57	0.57	0.06	0.08	0.08	0.13	0.17	0.17
v/c Ratio	0.40	0.52	0.10	0.65	0.56	0.22	0.31	0.59	0.44	2.32	0.23	0.42
Uniform Delay, d1	51.7	17.1	0.0	54.6	18.5	0.0	59.5	43.0	0.0	56.5	47.0	0.0
Delay	32.8	4.2	0.4	77.4	9.5	0.4	58.2	42.8	10.5	314.6	47.8	6.9
LOS	C	A	A	E	A	A	E	D	B	F	D	A
Approach Delay		5.6			17.2			34.7			223.0	
Approach LOS		A			B			C			F	
Queue Length 50th (ft)	79	94	1	124	122	1	26	61	0	~738	54	0
Queue Length 95th (ft)	120	67	0	168	145	8	37	84	23	#960	99	63
Internal Link Dist (ft)		905			760			542			1064	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	320		630	400		350	150			170		170
50th Bay Block Time %										75%		
95th Bay Block Time %										80%		
Queuing Penalty (veh)										187		

Intersection Summary
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 37 (28%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 2.32
Intersection Signal Delay: 47.2 Intersection LOS: D
Intersection Capacity Utilization 83.3% ICU Level of Service D
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

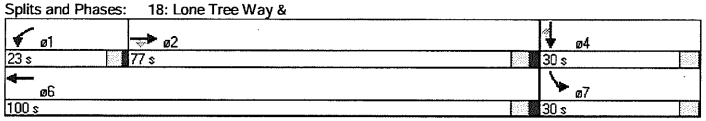
Splits and Phases: 17: Lone Tree Way & Canada Valley



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	0	5085	1583	3433	5085	0	0	0	0	1681	1681	1583
Flt Permitted				0.950						0.950	0.950	
Satd. Flow (perm)	0	5085	1583	3433	5085	0	0	0	0	1681	1681	1583
Satd. Flow (RTOR)			538									21
Volume (vph)	0	985	463	219	1891	0	0	0	0	74	0	63
Lane Group Flow (vph)	0	1145	538	252	2174	0	0	0	0	41	41	70
Turn Type			Perm	Prot						Prot		Perm
Protected Phases		2		1	6					7	4	
Permitted Phases			2									4
Total Split (s)	0.0	77.0	77.0	23.0	100.0	0.0	0.0	0.0	0.0	30.0	30.0	30.0
Act Effct Green (s)		84.9	84.9	15.1	103.6					22.9	21.6	22.9
Actuated g/C Ratio		0.65	0.65	0.12	0.80					0.18	0.17	0.18
v/c Ratio		0.34	0.44	0.63	0.54					0.14	0.15	0.24
Uniform Delay, d1		10.5	0.0	54.8	5.2					46.1	46.1	32.5
Delay		11.2	2.4	61.5	3.7					42.4	42.4	30.9
LOS		B	A	E	A					D	D	C
Approach Delay		8.4			9.7						37.1	
Approach LOS		A			A						D	
Queue Length 50th (ft)		105	57	93	76					29	29	34
Queue Length 95th (ft)		m101	m54	m69	m49					64	64	78
Internal Link Dist (ft)		760			760			536			445	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)				310						280		
50th Bay Block Time %					2%							
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 72 (55%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.63
Intersection Signal Delay: 10.1 Intersection LOS: B
Intersection Capacity Utilization 53.9% ICU Level of Service A
m Volume for 95th percentile queue is metered by upstream signal.

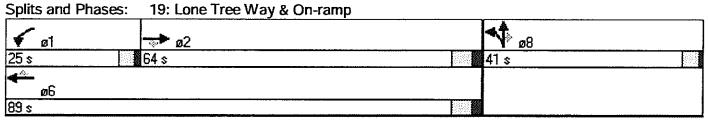
Splits and Phases: 18: Lone Tree Way &



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	0	5085	1583	1770	5085	1583	1681	1681	1583	0	0	0
Flt Permitted				0.950			0.950	0.950				
Satd. Flow (perm)	0	5085	1583	1770	5085	1583	1681	1681	1583	0	0	0
Satd. Flow (RTOR)			118			66			186			
Volume (vph)	0	959	100	14	1245	58	861	0	186	0	0	0
Lane Group Flow (vph)	0	1128	118	16	1415	66	979	978	423	0	0	0
Turn Type			Perm	Prot		Perm	Split		Perm			
Protected Phases		2		1	6		8	8				
Permitted Phases			2			6			8			
Total Split (s)	0.0	64.0	64.0	25.0	89.0	89.0	41.0	41.0	41.0	0.0	0.0	0.0
Act Effct Green (s)		81.7	81.7	6.7	86.1	86.1	38.0	38.0	38.0			
Actuated g/C Ratio		0.63	0.63	0.05	0.66	0.66	0.29	0.29	0.29			
v/c Ratio		0.35	0.11	0.18	0.42	0.06	1.99	1.99	0.71			
Uniform Delay, d1		12.7	0.0	61.9	10.3	0.0	46.0	46.0	21.9			
Delay		5.0	0.3	58.6	10.4	1.8	280.6	280.3	22.8			
LOS		A	A	E	B	A	F	F	C			
Approach Delay		4.5			10.5			234.6				
Approach LOS		A			B			F				
Queue Length 50th (ft)		19	0	13	189	0	~1351	~1349	183			
Queue Length 95th (ft)		25	0	37	212	15	#561	#561	49			
Internal Link Dist (ft)		760			620			935			1156	
50th Up Block Time (%)							31%	31%				
95th Up Block Time (%)												
Turn Bay Length (ft)			240	280		250	1000					
50th Bay Block Time %							26%	26%				
95th Bay Block Time %												
Queuing Penalty (veh)							127	127				

Intersection Summary
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 88 (68%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.99
Intersection Signal Delay: 113.2 Intersection LOS: F
Intersection Capacity Utilization 88.2% ICU Level of Service D
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 19: Lone Tree Way & On-ramp

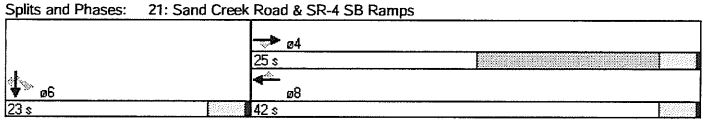


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	0	3539	1583	0	3539	1583	0	0	0	1681	1610	1504
Flt Permitted										0.950	0.950	
Satd. Flow (perm)	0	3539	1583	0	3539	1583	0	0	0	1681	1610	1504
Satd. Flow (RTOR)			13			306						13
Volume (vph)	0	59	12	0	18	275	0	0	0	426	0	12
Lane Group Flow (vph)	0	66	13	0	20	306	0	0	0	237	236	13
Turn Type			Perm			Perm				Perm		Perm
Protected Phases		4			8						6	
Permitted Phases			4			8				6		6
Total Split (s)	0.0	25.0	25.0	0.0	42.0	42.0	0.0	0.0	0.0	23.0	23.0	23.0
Act Effct Green (s)		43.8	43.8		43.8	43.8				15.2	15.2	15.2
Actuated g/C Ratio		0.67	0.67		0.67	0.67				0.23	0.23	0.23
v/c Ratio		0.03	0.01		0.01	0.26				0.60	0.63	0.04
Uniform Delay, d1		3.5	0.0		3.5	0.0				22.2	22.3	0.0
Delay		4.6	2.8		3.5	0.6				21.4	21.6	8.9
LOS		A	A		A	A				C	C	A
Approach Delay		4.3			0.8						21.2	
Approach LOS		A			A						C	
Queue Length 50th (ft)		3	0		1	0				88	92	0
Queue Length 95th (ft)		11	5		3	0				142	149	11
Internal Link Dist (ft)		1483			767			374			330	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)												
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 58 (89%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.63
Intersection Signal Delay: 12.2 Intersection LOS: B
Intersection Capacity Utilization 23.2% ICU Level of Service A

Splits and Phases: 21: Sand Creek Road & SR-4 SB Ramps

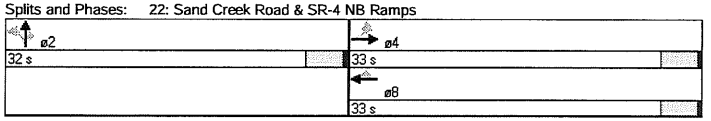


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	3433	3539	0	0	3539	1583	1681	1441	1504	0	0	0
Flt Permitted	0.551						0.950					
Satd. Flow (perm)	1991	3539	0	0	3539	1583	1681	1441	1504	0	0	0
Satd. Flow (RTOR)						587		266	266			
Volume (vph)	35	450	0	0	283	528	10	0	235	0	0	0
Lane Group Flow (vph)	39	500	0	0	314	587	11	130	131	0	0	0
Turn Type	Perm					Perm	Perm		Perm			
Protected Phases		4			8			2				
Permitted Phases	4					8	2		2			
Total Split (s)	33.0	33.0	0.0	0.0	33.0	33.0	32.0	32.0	32.0	0.0	0.0	0.0
Act Effct Green (s)	52.1	52.1			52.1	52.1	7.0	7.0	7.0			
Actuated g/C Ratio	0.80	0.80			0.80	0.80	0.11	0.11	0.11			
v/c Ratio	0.02	0.18			0.11	0.42	0.06	0.33	0.33			
Uniform Delay, d1	1.3	1.5			1.4	0.0	26.0	0.0	0.0			
Delay	0.2	0.2			1.5	0.2	25.9	0.0	0.0			
LOS	A	A			A	A	C	A	A			
Approach Delay		0.2			0.6			1.0				
Approach LOS		A			A			A				
Queue Length 50th (ft)	0	1			8	0	4	0	0			
Queue Length 95th (ft)	m0	2			15	13	17	0	0			
Internal Link Dist (ft)		767			541			321			323	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)												
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 49 (75%), Referenced to phase 4:EBTL, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.42
Intersection Signal Delay: 0.6 Intersection LOS: A
Intersection Capacity Utilization 53.0% ICU Level of Service A
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 22: Sand Creek Road & SR-4 NB Ramps

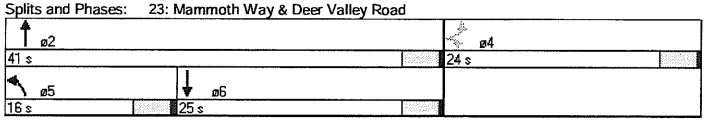


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	0	1583	0	0	0	1770	3539	0	0	3522	0
Flt Permitted	0.950						0.950					
Satd. Flow (perm)	1770	0	1583	0	0	0	1770	3539	0	0	3522	0
Satd. Flow (RTOR)			22								5	
Volume (vph)	81	0	20	0	0	0	10	555	0	0	620	20
Lane Group Flow (vph)	90	0	22	0	0	0	11	617	0	0	711	0
Turn Type	custom		custom				Prot					
Protected Phases							5	2			6	
Permitted Phases	4		4									
Total Split (s)	24.0	0.0	24.0	0.0	0.0	0.0	16.0	41.0	0.0	0.0	25.0	0.0
Act Effct Green (s)	21.0		21.0				13.0	38.0			22.0	
Actuated g/C Ratio	0.32		0.32				0.20	0.58			0.34	
v/c Ratio	0.16		0.04				0.03	0.30			0.59	
Uniform Delay, d1	15.7		0.0				20.9	6.8			17.6	
Delay	16.1		7.2				14.0	13.0			22.4	
LOS	B		A				B	B			C	
Approach Delay		14.4						13.0			22.4	
Approach LOS		B						B			C	
Queue Length 50th (ft)	25		0				4	114			65	
Queue Length 95th (ft)	55		13				17	153			216	
Internal Link Dist (ft)		308			324			966			970	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)												
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 65
Offset: 16 (25%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Control Type: Pretimed
Maximum v/c Ratio: 0.59
Intersection Signal Delay: 17.7 Intersection LOS: B
Intersection Capacity Utilization 31.4% ICU Level of Service A

Splits and Phases: 23: Mammoth Way & Deer Valley Road

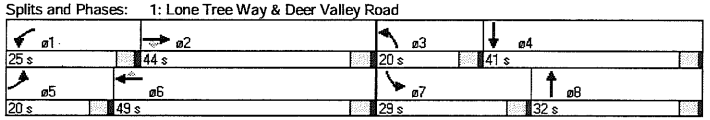


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	3433	3320	0	*2000	3507	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	3433	3320	0	1770	3507	0
Satd. Flow (RTOR)			57			92		127			5	
Volume (vph)	122	1369	256	264	1072	303	295	356	251	323	346	22
Lane Group Flow (vph)	144	1611	301	326	1323	374	343	706	0	497	566	0
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6						
Total Split (s)	20.0	44.0	44.0	25.0	49.0	49.0	20.0	32.0	0.0	29.0	41.0	0.0
Act Effct Green (s)	15.5	42.6	42.6	22.0	49.2	49.2	16.7	27.4		26.0	36.7	
Actuated g/C Ratio	0.12	0.33	0.33	0.17	0.38	0.38	0.13	0.21		0.20	0.28	
v/c Ratio	0.69	1.39	0.54	1.09	0.99	0.57	0.78	0.88		1.24	0.57	
Uniform Delay, d1	55.0	43.7	28.3	54.0	40.1	23.3	54.9	40.6		52.0	39.4	
Delay	55.0	174.7	29.5	100.8	87.2	42.2	52.3	46.6		144.5	39.5	
LOS	D	F	C	F	F	D	D	D		F	D	
Approach Delay		145.1			81.1			48.5			88.6	
Approach LOS		F			F			D			F	
Queue Length 50th (ft)	117	~970	171	~316	~657	266	147	218		~520	210	
Queue Length 95th (ft)	178	#1018	245	#429	#660	324	194	251		#436	182	
Internal Link Dist (ft)		900			1588			664			709	
50th Up Block Time (%)		7%										
95th Up Block Time (%)		11%										
Turn Bay Length (ft)	195		75	195		75	180			150		
50th Bay Block Time %		60%	40%	36%	60%	53%		19%		60%	21%	
95th Bay Block Time %		61%	48%	33%	46%	39%	10%	17%		55%	13%	
Queuing Penalty (veh)		87	353	228	171	305	18	61		163	85	

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 80 (62%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.39
Intersection Signal Delay: 98.1 Intersection LOS: F
Intersection Capacity Utilization 124.2% ICU Level of Service H
* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Lone Tree Way & Deer Valley Road

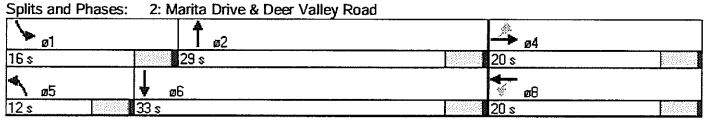


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	1583	0	1770	1591	0	1770	3536	0	1770	3525	0
Flt Permitted	0.619			0.754			0.950			0.950		
Satd. Flow (perm)	1153	1583	0	1405	1591	0	1770	3536	0	1770	3525	0
Satd. Flow (RTOR)		327			140			1			5	
Volume (vph)	11	0	5	36	4	126	14	836	5	32	808	21
Lane Group Flow (vph)	12	6	0	40	144	0	16	935	0	36	921	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Total Split (s)	20.0	20.0	0.0	20.0	20.0	0.0	12.0	29.0	0.0	16.0	33.0	0.0
Act Effct Green (s)	8.4	8.4		8.4	8.4		7.2	48.3		7.8	50.8	
Actuated g/C Ratio	0.13	0.13		0.13	0.13		0.11	0.74		0.12	0.78	
v/c Ratio	0.08	0.01		0.22	0.44		0.08	0.36		0.17	0.33	
Uniform Delay, d1	25.9	0.0		26.3	0.7		30.3	4.4		29.0	3.7	
Delay	23.8	0.0		24.7	5.9		30.6	1.4		28.8	1.7	
LOS	C	A		C	A		C	A		C	A	
Approach Delay		15.9			10.0			1.9			2.7	
Approach LOS		B			A			A			A	
Queue Length 50th (ft)	4	0		15	1		6	4		15	15	
Queue Length 95th (ft)	17	0		38	44		m17	93		m24	m129	
Internal Link Dist (ft)		346			300			2263			664	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	40			100			175			125		
50th Bay Block Time %												
95th Bay Block Time %											4%	
Queuing Penalty (veh)											1	

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 16 (25%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.44
Intersection Signal Delay: 3.1 Intersection LOS: A
Intersection Capacity Utilization 41.4% ICU Level of Service A
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Marita Drive & Deer Valley Road

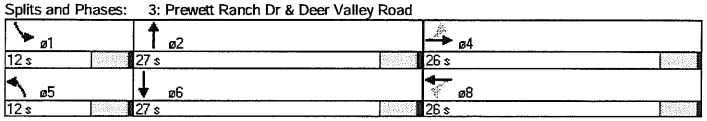


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	1779	0	1770	1730	0	1770	3497	0	1770	3461	0
Flt Permitted	0.557			0.631			0.950			0.950		
Satd. Flow (perm)	1038	1779	0	1175	1730	0	1770	3497	0	1770	3461	0
Satd. Flow (RTOR)		37			78			16			34	
Volume (vph)	84	97	42	18	99	90	89	660	57	147	592	101
Lane Group Flow (vph)	93	155	0	20	210	0	99	796	0	163	770	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Total Split (s)	26.0	26.0	0.0	26.0	26.0	0.0	12.0	27.0	0.0	12.0	27.0	0.0
Act Effct Green (s)	11.6	11.6		11.6	11.6		8.5	35.5		8.8	37.8	
Actuated g/C Ratio	0.18	0.18		0.18	0.18		0.13	0.55		0.14	0.58	
v/c Ratio	0.50	0.44		0.09	0.56		0.43	0.42		0.68	0.38	
Uniform Delay, d1	24.1	17.9		22.3	15.0		27.1	8.4		26.6	7.3	
Delay	22.9	16.9		20.1	14.3		25.4	5.0		41.6	7.7	
LOS	C	B		C	B		C	A		D	A	
Approach Delay		19.1			14.8			7.3			13.6	
Approach LOS		B			B			A			B	
Queue Length 50th (ft)	34	42		7	47		44	0		98	135	
Queue Length 95th (ft)	68	81		21	94		88	84		#135	181	
Internal Link Dist (ft)		416			350			970			2263	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	155			80			140			140		
50th Bay Block Time %											3%	
95th Bay Block Time %					18%					4%	11%	
Queuing Penalty (veh)					2					8	11	

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 16 (25%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.68
Intersection Signal Delay: 11.9 Intersection LOS: B
Intersection Capacity Utilization 61.7% ICU Level of Service B
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Prewett Ranch Dr & Deer Valley Road

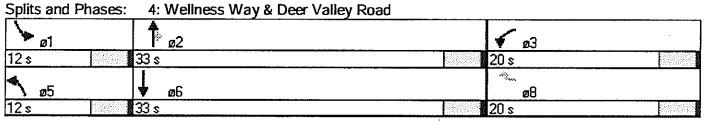


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	0	0	0	1770	0	1583	1863	3539	1583	1770	1863	0
Flt Permitted				0.950						0.950		
Satd. Flow (perm)	0	0	0	1770	0	1583	1863	3539	1583	1770	1863	0
Satd. Flow (RTOR)						46			6			
Volume (vph)	0	0	0	3	0	41	0	811	5	69	556	0
Lane Group Flow (vph)	0	0	0	3	0	46	0	901	6	77	618	0
Turn Type				Prot		custom	Prot		Perm	Prot		
Protected Phases				3			5	2		1	6	
Permitted Phases						8			2			
Total Split (s)	0.0	0.0	0.0	20.0	0.0	20.0	12.0	33.0	33.0	12.0	33.0	0.0
Act Effct Green (s)				7.2		7.2		48.7	48.7	8.3	59.3	
Actuated g/C Ratio				0.11		0.11		0.75	0.75	0.13	0.91	
v/c Ratio				0.02		0.21		0.34	0.01	0.34	0.36	
Uniform Delay, d1				28.7		0.0		4.2	0.0	26.9	1.1	
Delay				25.0		9.3		2.8	1.8	19.7	5.7	
LOS				C		A		A	A	B	A	
Approach Delay					10.3			2.8			7.3	
Approach LOS					B			A			A	
Queue Length 50th (ft)				1		0		11	0	38	0	
Queue Length 95th (ft)				8		26		58	m1	m57	209	
Internal Link Dist (ft)		172			369			465			944	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)				185					175	230		
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 28 (43%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.36
Intersection Signal Delay: 4.9 Intersection LOS: A
Intersection Capacity Utilization 49.2% ICU Level of Service A
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Wellness Way & Deer Valley Road

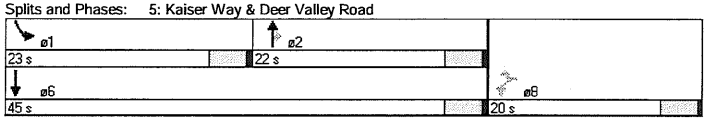


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	0	0	0	1770	0	1583	0	3539	1583	1770	1863	0
Flt Permitted				0.950						0.950		
Satd. Flow (perm)	0	0	0	1770	0	1583	0	3539	1583	1770	1863	0
Satd. Flow (RTOR)						320			36			
Volume (vph)	0	0	0	82	0	288	0	528	32	131	428	0
Lane Group Flow (vph)	0	0	0	91	0	320	0	587	36	146	476	0
Turn Type				custom		custom			Perm	Prot		
Protected Phases								2		1	6	
Permitted Phases				8		8			2			
Total Split (s)	0.0	0.0	0.0	20.0	0.0	20.0	0.0	22.0	22.0	23.0	45.0	0.0
Act Effct Green (s)				10.1		10.1		35.6	35.6	12.2	48.9	
Actuated g/C Ratio				0.16		0.16		0.55	0.55	0.19	0.75	
v/c Ratio				0.33		0.62		0.30	0.04	0.44	0.34	
Uniform Delay, d1				24.4		0.0		8.4	0.0	24.3	2.7	
Delay				23.3		3.4		8.6	2.3	25.3	1.0	
LOS				C		A		A	A	C	A	
Approach Delay					7.8			8.2			6.7	
Approach LOS					A			A			A	
Queue Length 50th (ft)				33		0		69	0	28	1	
Queue Length 95th (ft)				63		56		126	m6	118	85	
Internal Link Dist (ft)		197			305			523			465	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)						90			480	220		
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 16 (25%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.62
Intersection Signal Delay: 7.5 Intersection LOS: A
Intersection Capacity Utilization 42.7% ICU Level of Service A
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Kaiser Way & Deer Valley Road

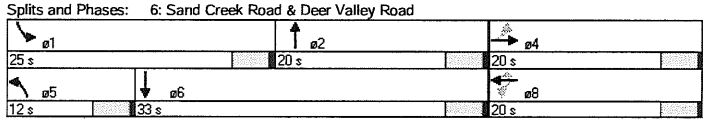


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	1863	0	0	1770	1863	1863	1855	0	1863	1861	0
Flt Permitted	0.732				0.757							
Satd. Flow (perm)	1364	1863	0	0	1410	1863	1863	1855	0	1863	1861	0
Satd. Flow (RTOR)								2				
Volume (vph)	4	0	0	35	0	0	0	556	17	0	507	2
Lane Group Flow (vph)	4	0	0	0	39	0	0	637	0	0	565	0
Turn Type	Perm			Perm		Perm	Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8						
Total Split (s)	20.0	20.0	0.0	20.0	20.0	20.0	12.0	20.0	0.0	25.0	33.0	0.0
Act Effct Green (s)	7.8				8.0			58.7			58.7	
Actuated g/C Ratio	0.12				0.12			0.90			0.90	
v/c Ratio	0.02				0.22			0.38			0.34	
Uniform Delay, d1	28.2				28.9			1.3			1.2	
Delay	23.8				25.2			1.8			1.1	
LOS	C				C			A			A	
Approach Delay		23.8			25.2			1.8			1.1	
Approach LOS		C			C			A			A	
Queue Length 50th (ft)	1				14			0			0	
Queue Length 95th (ft)	9				38			115			69	
Internal Link Dist (ft)		412			943			602			523	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)												
50th Bay Block Time %												
95th Bay Block Time %								16%				
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 16 (25%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.38
Intersection Signal Delay: 2.3 — Intersection LOS: A
Intersection Capacity Utilization 43.7% — ICU Level of Service A

Splits and Phases: 6: Sand Creek Road & Deer Valley Road

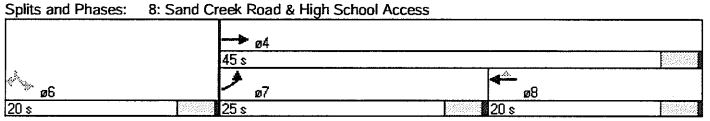


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1863	3539	0	0	3539	1583	0	0	0	1770	0	1863
Flt Permitted										0.950		
Satd. Flow (perm)	1863	3539	0	0	3539	1583	0	0	0	1770	0	1863
Satd. Flow (RTOR)						1091						
Volume (vph)	0	0	0	0	0	80	0	0	0	80	0	0
Lane Group Flow (vph)	0	0	0	0	0	89	0	0	0	89	0	0
Turn Type	Prot					Perm				custom		custom
Protected Phases	7	4			8							
Permitted Phases						8				6		6
Total Split (s)	25.0	45.0	0.0	0.0	20.0	20.0	0.0	0.0	0.0	20.0	0.0	20.0
Act Effct Green (s)						49.6				9.5		
Actuated g/C Ratio						0.76				0.15		
v/c Ratio						0.06				0.35		
Uniform Delay, d1						0.0				25.0		
Delay						0.0				24.3		
LOS						A				C		
Approach Delay		0.0			0.0						24.3	
Approach LOS		A			A						C	
Queue Length 50th (ft)						0				32		
Queue Length 95th (ft)						0				66		
Internal Link Dist (ft)		2570			1012			515			1044	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)												
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 61 (94%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.35
Intersection Signal Delay: 12.2 — Intersection LOS: B
Intersection Capacity Utilization 8.8% — ICU Level of Service A

Splits and Phases: 8: Sand Creek Road & High School Access

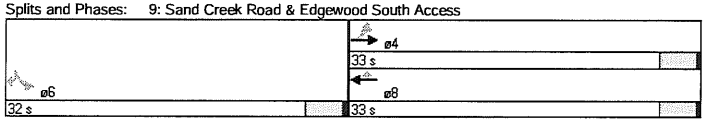


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1863	3539	0	0	3539	1583	0	0	0	1770	0	1863
Flt Permitted										0.950		
Satd. Flow (perm)	1863	3539	0	0	3539	1583	0	0	0	1770	0	1863
Satd. Flow (RTOR)						13						
Volume (vph)	0	80	0	0	80	12	0	0	0	13	0	0
Lane Group Flow (vph)	0	89	0	0	89	13	0	0	0	14	0	0
Turn Type	Perm					Perm				custom		custom
Protected Phases		4			8							
Permitted Phases	4					8				6		6
Total Split (s)	33.0	33.0	0.0	0.0	33.0	33.0	0.0	0.0	0.0	32.0	0.0	32.0
Act Effct Green (s)		52.0			52.0	52.0				7.0		
Actuated g/C Ratio		0.80			0.80	0.80				0.11		
v/c Ratio		0.03			0.03	0.01				0.07		
Uniform Delay, d1		1.3			1.3	0.0				26.1		
Delay		0.0			0.9	0.3				25.9		
LOS		A			A	A				C		
Approach Delay		0.0			0.8						25.9	
Approach LOS		A			A						C	
Queue Length 50th (ft)		0			1	0				5		
Queue Length 95th (ft)		0			2	1				20		
Internal Link Dist (ft)		1012			367			678			1094	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)												
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 49 (75%), Referenced to phase 4:EBTL and 8:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.07
Intersection Signal Delay: 2.2 — Intersection LOS: A
Intersection Capacity Utilization 13.3% — ICU Level of Service A

Splits and Phases: 9: Sand Creek Road & Edgewood South Access

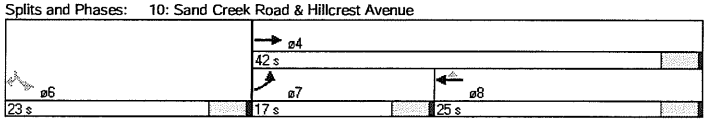


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	3539	0	0	3539	1863	0	0	0	1770	0	1583
Flt Permitted	0.950									0.950		
Satd. Flow (perm)	1770	3539	0	0	3539	1863	0	0	0	1770	0	1583
Satd. Flow (RTOR)												102
Volume (vph)	93	0	0	0	0	0	0	0	0	1	0	92
Lane Group Flow (vph)	103	0	0	0	0	0	0	0	0	1	0	102
Turn Type	Prot					Perm				custom		custom
Protected Phases	7	4			8							
Permitted Phases						8				6		6
Total Split (s)	17.0	42.0	0.0	0.0	25.0	25.0	0.0	0.0	0.0	23.0	0.0	23.0
Act Effct Green (s)	10.2									7.9		7.9
Actuated g/C Ratio	0.16									0.12		0.12
v/c Ratio	0.37									0.00		0.36
Uniform Delay, d1	25.5									25.0		0.0
Delay	35.5									34.0		13.8
LOS	D									C		B
Approach Delay		35.5			0.0						14.0	
Approach LOS		D			A						B	
Queue Length 50th (ft)	47									1		0
Queue Length 95th (ft)	92									4		58
Internal Link Dist (ft)		367			1265			116			1953	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)												
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 58 (89%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.37
Intersection Signal Delay: 24.7 — Intersection LOS: C
Intersection Capacity Utilization 15.7% — ICU Level of Service A

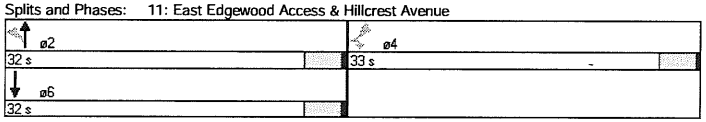
Splits and Phases: 10: Sand Creek Road & Hillcrest Avenue



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	0	1863	0	0	0	1863	3539	0	0	3263	0
Flt Permitted	0.950											
Satd. Flow (perm)	1770	0	1863	0	0	0	1863	3539	0	0	3263	0
Satd. Flow (RTOR)											112	
Volume (vph)	56	0	0	0	0	0	0	93	0	0	93	101
Lane Group Flow (vph)	62	0	0	0	0	0	0	103	0	0	215	0
Turn Type	custom		custom				Perm					
Protected Phases								2			6	
Permitted Phases	4		4				2					
Total Split (s)	33.0	0.0	33.0	0.0	0.0	0.0	32.0	32.0	0.0	0.0	32.0	0.0
Act Effct Green (s)	8.1							58.7			58.7	
Actuated g/C Ratio	0.12							0.90			0.90	
v/c Ratio	0.28							0.03			0.07	
Uniform Delay, d1	29.1							0.9			0.4	
Delay	25.4							0.0			1.5	
LOS	C							A			A	
Approach Delay		25.4						0.0			1.5	
Approach LOS		C						A			A	
Queue Length 50th (ft)	23							0			0	
Queue Length 95th (ft)	52							0			42	
Internal Link Dist (ft)		296			524			1953			777	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)												
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary
Cycle Length: 65
Actuated Cycle Length: 65
Offset: 16 (25%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.28
Intersection Signal Delay: 5.0 Intersection LOS: A
Intersection Capacity Utilization 16.6% ICU Level of Service A

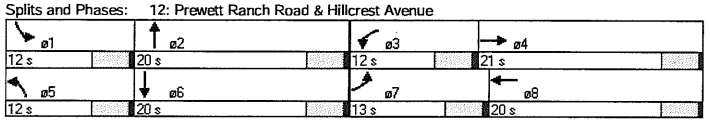
Splits and Phases: 11: East Edgewood Access & Hillcrest Avenue



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	1844	0	1863	1723	0	1770	3539	0	1770	3345	0
Flt Permitted	0.950						0.950			0.950		
Satd. Flow (perm)	1770	1844	0	1863	1723	0	1770	3539	0	1770	3345	0
Satd. Flow (RTOR)		2			12						154	
Volume (vph)	126	24	2	0	11	11	2	171	0	22	238	139
Lane Group Flow (vph)	140	29	0	0	24	0	2	190	0	24	418	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Total Split (s)	13.0	21.0	0.0	12.0	20.0	0.0	12.0	20.0	0.0	12.0	20.0	0.0
Act Effct Green (s)	9.3	11.5			7.0		6.6	47.6		7.4	48.0	
Actuated g/C Ratio	0.14	0.18			0.11		0.10	0.73		0.11	0.74	
v/c Ratio	0.55	0.09			0.12		0.01	0.07		0.12	0.17	
Uniform Delay, d1	27.0	19.2			15.1		30.5	5.2		30.3	3.3	
Delay	26.1	18.7			18.5		27.0	4.7		27.3	2.5	
LOS	C	B			B		C	A		C	A	
Approach Delay		24.8			18.5			4.9			3.8	
Approach LOS		C			B			A			A	
Queue Length 50th (ft)	52	9			4		0	1		10	0	
Queue Length 95th (ft)	102	23			23		7	30		24	50	
Internal Link Dist (ft)		241			477			777			954	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	100											
50th Bay Block Time %												
95th Bay Block Time %	11%											
Queuing Penalty (veh)	1											

Intersection Summary
Cycle Length: 65
Actuated Cycle Length: 65
Offset: 28 (43%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.55
Intersection Signal Delay: 8.8 Intersection LOS: A
Intersection Capacity Utilization 33.3% ICU Level of Service A

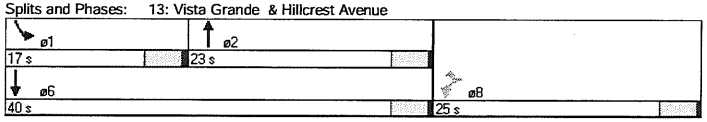
Splits and Phases: 12: Prewett Ranch Road & Hillcrest Avenue



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	0	0	0	1770	0	1583	0	3433	0	1770	3539	0
Flt Permitted				0.950						0.950		
Satd. Flow (perm)	0	0	0	1770	0	1583	0	3433	0	1770	3539	0
Satd. Flow (RTOR)						33		49				
Volume (vph)	0	0	0	52	0	30	0	252	63	64	342	0
Lane Group Flow (vph)	0	0	0	58	0	33	0	350	0	71	380	0
Turn Type				custom		custom				Prot		
Protected Phases								2		1	6	
Permitted Phases				8		8						
Total Split (s)	0.0	0.0	0.0	25.0	0.0	25.0	0.0	23.0	0.0	17.0	40.0	0.0
Act Effct Green (s)				8.3		8.3		47.9		8.8	55.8	
Actuated g/C Ratio				0.13		0.13		0.74		0.14	0.86	
v/c Ratio				0.26		0.14		0.14		0.30	0.13	
Uniform Delay, d1				27.6		0.0		3.3		27.5	1.2	
Delay				25.1		9.8		4.1		27.0	1.3	
LOS				C		A		A		C	A	
Approach Delay					19.5			4.1			5.3	
Approach LOS					B			A			A	
Queue Length 50th (ft)				21		0		22		37	24	
Queue Length 95th (ft)				50		21		63		m38	m8	
Internal Link Dist (ft)		216			502			954			614	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)				100						195		
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary
Cycle Length: 65
Actuated Cycle Length: 65
Offset: 16 (25%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.30
Intersection Signal Delay: 6.3 Intersection LOS: A
Intersection Capacity Utilization 27.2% ICU Level of Service A
m Volume for 95th percentile queue is metered by upstream signal.

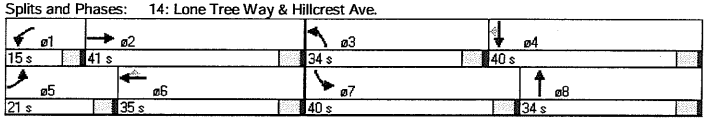
Splits and Phases: 13: Vista Grande & Hillcrest Avenue



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	4996	0	1770	5085	1583	1770	3278	0	*1900	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	4996	0	1769	5085	1583	1770	3278	0	3422	3539	1583
Satd. Flow (RTOR)		16				512		85				144
Volume (vph)	282	1426	166	110	1220	663	146	77	63	848	133	125
Lane Group Flow (vph)	332	1873	0	118	1312	713	197	189	0	975	153	144
Turn Type	Prot			Prot		Perm	Prot			Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases						6						4
Total Split (s)	21.0	41.0	0.0	15.0	35.0	35.0	34.0	34.0	0.0	40.0	40.0	40.0
Act Effct Green (s)	17.9	54.7		11.7	48.5	48.5	21.2	14.5		37.1	30.2	30.2
Actuated g/C Ratio	0.14	0.42		0.09	0.37	0.37	0.16	0.11		0.29	0.23	0.23
v/c Ratio	1.36	0.89		0.74	0.69	0.78	0.68	0.43		1.80	0.19	0.30
Uniform Delay, d1	56.0	34.4		57.7	34.4	8.9	51.1	29.2		46.5	40.0	0.0
Delay	128.8	30.4		53.8	45.0	23.7	55.2	23.9		255.4	39.9	5.9
LOS	F	C		D	D	C	E	C		F	D	A
Approach Delay		45.2			38.4			39.9			201.3	
Approach LOS		D			D			D			F	
Queue Length 50th (ft)	~378	173		92	302	270	172	0		~636	56	0
Queue Length 95th (ft)	m#240	m452		#197	#524	#408	169	0		#733	76	46
Internal Link Dist (ft)		945			1420			712			1758	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	350			210		210	195			855		
50th Bay Block Time %	38%				28%	23%						
95th Bay Block Time %		7%			57%	28%						
Queuing Penalty (veh)	118	11			50	110						

Intersection Summary
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 50 (38%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.80
Intersection Signal Delay: 75.5 Intersection LOS: E
Intersection Capacity Utilization 92.4% ICU Level of Service E
* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

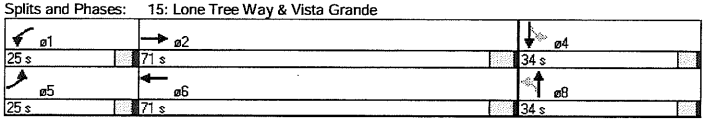
Splits and Phases: 14: Lone Tree Way & Hillcrest Ave.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	5056	0	1770	5065	0	1770	1632	0	1770	1645	0
Flt Permitted	0.950			0.950			0.702			0.480		
Satd. Flow (perm)	1770	5056	0	1769	5065	0	1308	1632	0	894	1645	0
Satd. Flow (RTOR)		6			5			148			49	
Volume (vph)	46	2098	77	127	1822	55	51	27	130	40	10	35
Lane Group Flow (vph)	51	2417	0	137	2018	0	58	179	0	56	63	0
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		
Total Split (s)	25.0	71.0	0.0	25.0	71.0	0.0	34.0	34.0	0.0	34.0	34.0	0.0
Act Effct Green (s)	10.7	89.9		16.6	97.9		14.5	14.5		14.5	14.5	
Actuated g/C Ratio	0.08	0.69		0.13	0.75		0.11	0.11		0.11	0.11	
v/c Ratio	0.35	0.69		0.60	0.53		0.40	0.57		0.56	0.28	
Uniform Delay, d1	57.4	11.8		53.6	7.0		53.7	9.1		54.7	11.5	
Delay	60.0	6.7		49.6	6.1		51.9	12.4		53.4	18.2	
LOS	E	A		D	A		D	B		D	B	
Approach Delay		7.8			8.8			22.1			34.8	
Approach LOS		A			A			C			C	
Queue Length 50th (ft)	45	127		122	99		46	24		46	11	
Queue Length 95th (ft)	m43	m115		180	244		85	88		68	33	
Internal Link Dist (ft)		1420			1055			786			614	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	200			200			130			100		
50th Bay Block Time %		1%										
95th Bay Block Time %					8%							
Queuing Penalty (veh)					5							

Intersection Summary
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 98 (75%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.69
Intersection Signal Delay: 9.6 Intersection LOS: A
Intersection Capacity Utilization 75.2% ICU Level of Service C
m Volume for 95th percentile queue is metered by upstream signal.

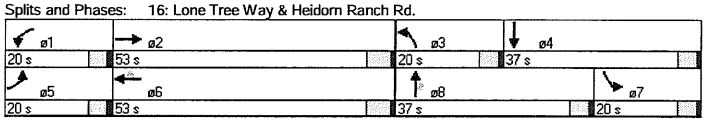
Splits and Phases: 15: Lone Tree Way & Vista Grande



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	5070	0	1770	4806	1362	3433	1863	1583	1770	1863	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	5070	0	1770	4806	1362	3433	1863	1583	1770	1863	0
Satd. Flow (RTOR)		3				2			46			
Volume (vph)	3	2177	52	30	1894	8	84	1	23	9	0	0
Lane Group Flow (vph)	3	2274	0	34	2152	9	168	2	46	19	0	0
Turn Type	Prot			Prot		Perm	Prot		Perm	Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases						6			8			
Total Split (s)	20.0	53.0	0.0	20.0	53.0	53.0	20.0	37.0	37.0	20.0	37.0	0.0
Act Effct Green (s)	7.4	99.0		10.5	105.6	105.6	16.1	10.7	10.7	9.4		
Actuated g/C Ratio	0.06	0.76		0.08	0.81	0.81	0.12	0.08	0.08	0.07		
v/c Ratio	0.03	0.59		0.24	0.55	0.01	0.39	0.01	0.27	0.15		
Uniform Delay, d1	62.3	8.8		58.6	6.6	2.8	49.9	55.0	0.0	60.5		
Delay	69.7	1.6		68.3	2.5	1.5	51.0	56.0	16.1	56.2		
LOS	E	A		E	A	A	D	E	B	E		
Approach Delay		1.6			3.5			43.6			56.2	
Approach LOS		A			A			D			E	
Queue Length 50th (ft)	3	40		29	70	1	70	2	0	15		
Queue Length 95th (ft)	m4	56		m47	101	m1	52	6	6	21		
Internal Link Dist (ft)		1055			905			972			316	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	185			400		95	200		200	50		
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 114 (88%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.59
Intersection Signal Delay: 4.7 Intersection LOS: A
Intersection Capacity Utilization 62.4% ICU Level of Service B
m Volume for 95th percentile queue is metered by upstream signal.

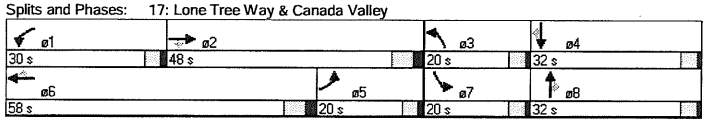
Splits and Phases: 16: Lone Tree Way & Heidorn Ranch Rd.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	5085	1583	3433	5085	1583	3433	1671	1504	1770	1863	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	5085	1583	3433	5085	1583	3433	1671	1504	1770	1863	1583
Satd. Flow (RTOR)			105			409		21	234			134
Volume (vph)	189	1940	102	354	1648	376	125	81	209	470	78	121
Lane Group Flow (vph)	195	2000	105	385	1791	409	181	186	234	522	87	134
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Total Split (s)	20.0	48.0	48.0	30.0	58.0	58.0	20.0	32.0	32.0	20.0	32.0	32.0
Act Effct Green (s)	17.0	63.8	63.8	19.4	66.2	66.2	12.0	17.8	17.8	17.0	22.8	22.8
Actuated g/C Ratio	0.13	0.49	0.49	0.15	0.51	0.51	0.09	0.14	0.14	0.13	0.18	0.18
v/c Ratio	0.84	0.80	0.13	0.75	0.69	0.41	0.57	0.75	0.57	2.26	0.27	0.35
Uniform Delay, d1	55.2	27.8	0.0	53.0	24.1	0.0	56.4	47.7	0.0	56.5	46.4	0.0
Delay	62.9	26.9	1.7	52.6	25.2	2.0	56.1	46.9	5.8	308.8	45.8	7.1
LOS	E	C	A	D	C	A	E	D	A	F	D	A
Approach Delay		28.8			25.6			33.6			223.6	
Approach LOS		C			C			C			F	
Queue Length 50th (ft)	171	517	0	162	406	0	76	143	0	~711	64	0
Queue Length 95th (ft)	#292	#717	16	208	519	57	84	155	13	#932	111	55
Internal Link Dist (ft)		905			760			542			1064	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	320		630	400		350	150			170		170
50th Bay Block Time %		10%			1%					74%		
95th Bay Block Time %		16%			12%			3%		80%		
Queuing Penalty (veh)		26			23			3		170		

Intersection Summary
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 87 (67%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 2.26
Intersection Signal Delay: 51.2 Intersection LOS: D
Intersection Capacity Utilization 104.2% ICU Level of Service F
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

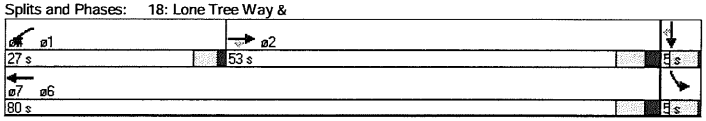
Splits and Phases: 17: Lone Tree Way & Canada Valley



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	0	5085	1583	3433	5085	0	0	0	0	1681	1681	1583
Flt Permitted				0.950						0.950	0.950	
Satd. Flow (perm)	0	5085	1583	3433	5085	0	0	0	0	1681	1681	1583
Satd. Flow (RTOR)			291									16
Volume (vph)	0	1469	1042	273	2433	0	0	0	0	111	0	121
Lane Group Flow (vph)	0	1708	1212	314	2797	0	0	0	0	62	61	134
Turn Type			Perm	Prot						Prot		Perm
Protected Phases		2		1	6					7	4	
Permitted Phases			2									4
Total Split (s)	0.0	53.0	53.0	27.0	80.0	0.0	0.0	0.0	0.0	5.0	5.0	5.0
Act Effct Green (s)		60.5	60.5	13.5	77.0					2.0	2.0	2.0
Actuated g/C Ratio		0.71	0.71	0.16	0.91					0.02	0.02	0.02
v/c Ratio		0.47	1.00	0.57	0.61					1.55	1.52	2.53
Uniform Delay, d1		5.3	9.3	33.1	0.8					41.5	41.5	29.0
Delay		5.7	36.2	32.7	0.9					248.2	244.7	331.2
LOS		A	D	C	A					F	F	F
Approach Delay		18.4			4.1						290.7	
Approach LOS		B			A						F	
Queue Length 50th (ft)		120	~459	80	32					~50	~48	~113
Queue Length 95th (ft)		163	#833	111	36					#131	#131	#225
Internal Link Dist (ft)		760			760			536			445	
50th Up Block Time (%)												
95th Up Block Time (%)			16%									
Turn Bay Length (ft)				310						280		
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)			97									

Intersection Summary
Cycle Length: 85
Actuated Cycle Length: 85
Offset: 34 (40%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 2.53
Intersection Signal Delay: 22.4 Intersection LOS: C
Intersection Capacity Utilization 97.4% ICU Level of Service E
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 18: Lone Tree Way &

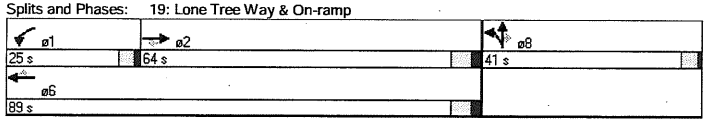


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱	↰	↑↑↑	↱	↰	↑	↱			
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	0	5085	1583	1770	5085	1583	1681	1681	1583	0	0	0
Flt Permitted				0.950			0.950	0.950				
Satd. Flow (perm)	0	5085	1583	1770	5085	1583	1681	1681	1583	0	0	0
Satd. Flow (RTOR)			96			130			244			
Volume (vph)	0	1487	94	24	1587	114	1117	0	316	0	0	0
Lane Group Flow (vph)	0	1749	111	27	1803	130	1270	1269	718	0	0	0
Turn Type			Perm	Prot		Perm	Split		Perm			
Protected Phases		2		1	6		8	8				
Permitted Phases			2			6			8			
Total Split (s)	0.0	64.0	64.0	25.0	89.0	89.0	41.0	41.0	41.0	0.0	0.0	0.0
Act Effct Green (s)		79.2	79.2	7.4	86.1	86.1	38.0	38.0	38.0			
Actuated g/C Ratio		0.61	0.61	0.06	0.66	0.66	0.29	0.29	0.29			
v/c Ratio		0.56	0.11	0.27	0.54	0.12	2.59	2.58	1.13			
Uniform Delay, d1		16.2	1.5	60.5	11.5	0.0	46.0	46.0	28.3			
Delay		16.0	3.3	58.2	11.6	1.3	335.2	335.0	92.3			
LOS		B	A	E	B	A	F	F	F			
Approach Delay		15.2			11.6			281.6				
Approach LOS		B			B			F				
Queue Length 50th (ft)		327	5	22	269	0	~1887	~1886	~547			
Queue Length 95th (ft)		357	28	52	295	20	#826	#826	128			
Internal Link Dist (ft)		760			620			935			1156	
50th Up Block Time (%)							51%	51%				
95th Up Block Time (%)												
Turn Bay Length (ft)			240	280		250	1000					
50th Bay Block Time %		12%					47%	47%				
95th Bay Block Time %		15%			3%							
Queuing Penalty (veh)		14					301	301				

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 10 (8%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 2.59
Intersection Signal Delay: 136.8 Intersection LOS: F
Intersection Capacity Utilization 111.8% ICU Level of Service G
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 19: Lone Tree Way & On-ramp

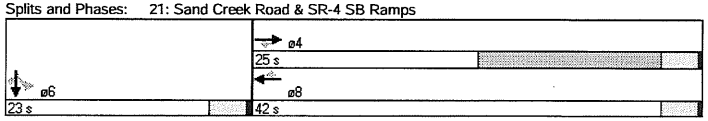


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↱		↑↑	↱				↰	✥	↱
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	0	3539	1583	0	3539	1583	0	0	0	1681	1610	1504
Flt Permitted										0.950	0.950	
Satd. Flow (perm)	0	3539	1583	0	3539	1583	0	0	0	1681	1610	1504
Satd. Flow (RTOR)			16			166						47
Volume (vph)	0	39	14	0	40	149	0	0	0	696	0	42
Lane Group Flow (vph)	0	43	16	0	44	166	0	0	0	387	386	47
Turn Type			Perm			Perm				Perm		Perm
Protected Phases		4			8						6	
Permitted Phases			4			8				6		6
Total Split (s)	0.0	25.0	25.0	0.0	42.0	42.0	0.0	0.0	0.0	23.0	23.0	23.0
Act Effct Green (s)		40.1	40.1		40.1	40.1				18.9	18.9	18.9
Actuated g/C Ratio		0.62	0.62		0.62	0.62				0.29	0.29	0.29
v/c Ratio		0.02	0.02		0.02	0.16				0.79	0.82	0.10
Uniform Delay, d1		4.8	0.0		4.8	0.0				21.2	21.5	0.0
Delay		5.3	2.8		4.0	0.7				25.0	27.0	5.9
LOS		A	A		A	A				C	C	A
Approach Delay		4.6			1.4						24.9	
Approach LOS		A			A						C	
Queue Length 50th (ft)		3	0		2	0				143	150	0
Queue Length 95th (ft)		8	6		5	0				#273	#294	21
Internal Link Dist (ft)		1483			767			374			330	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)												
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 58 (89%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.82
Intersection Signal Delay: 19.2 Intersection LOS: B
Intersection Capacity Utilization 31.9% ICU Level of Service A
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

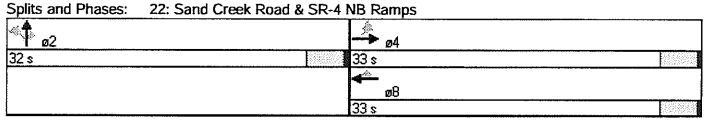
Splits and Phases: 21: Sand Creek Road & SR-4 SB Ramps



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	3433	3539	0	0	3539	1583	1681	1441	1504	0	0	0
Flt Permitted	0.628						0.950					
Satd. Flow (perm)	2269	3539	0	0	3539	1583	1681	1441	1504	0	0	0
Satd. Flow (RTOR)						517		113	113			
Volume (vph)	23	713	0	0	177	465	13	0	264	0	0	0
Lane Group Flow (vph)	26	792	0	0	197	517	14	146	147	0	0	0
Turn Type	Perm					Perm	Perm		Perm			
Protected Phases		4			8			2				
Permitted Phases	4					8	2		2			
Total Split (s)	33.0	33.0	0.0	0.0	33.0	33.0	32.0	32.0	32.0	0.0	0.0	0.0
Act Effct Green (s)	50.4	50.4			50.4	50.4	8.6	8.6	8.6			
Actuated g/C Ratio	0.78	0.78			0.78	0.78	0.13	0.13	0.13			
v/c Ratio	0.01	0.29			0.07	0.38	0.06	0.51	0.50			
Uniform Delay, d1	1.7	2.1			1.7	0.0	24.6	5.7	5.8			
Delay	0.1	0.2			2.1	0.3	23.1	8.7	8.8			
LOS	A	A			A	A	C	A	A			
Approach Delay		0.2			0.8			9.4				
Approach LOS		A			A			A				
Queue Length 50th (ft)	0	1			5	0	5	13	12			
Queue Length 95th (ft)	m0	m2			16	20	18	60	57			
Internal Link Dist (ft)		767			541			321			323	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)												
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary
Cycle Length: 65
Actuated Cycle Length: 65
Offset: 49 (75%), Referenced to phase 4:EBTL, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.51
Intersection Signal Delay: 2.0 Intersection LOS: A
Intersection Capacity Utilization 48.7% ICU Level of Service A
m Volume for 95th percentile queue is metered by upstream signal.

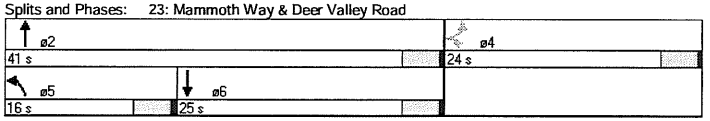
Splits and Phases: 22: Sand Creek Road & SR-4 NB Ramps



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	0	1583	0	0	0	1770	3539	0	0	3518	0
Flt Permitted	0.950						0.950					
Satd. Flow (perm)	1770	0	1583	0	0	0	1770	3539	0	0	3518	0
Satd. Flow (RTOR)			10								6	
Volume (vph)	21	0	9	0	0	0	38	799	0	0	651	25
Lane Group Flow (vph)	23	0	10	0	0	0	42	888	0	0	751	0
Turn Type	custom		custom				Prot					
Protected Phases							5	2			6	
Permitted Phases	4		4									
Total Split (s)	24.0	0.0	24.0	0.0	0.0	0.0	16.0	41.0	0.0	0.0	25.0	0.0
Act Effct Green (s)	21.0		21.0				13.0	38.0			22.0	
Actuated g/C Ratio	0.32		0.32				0.20	0.58			0.34	
v/c Ratio	0.04		0.02				0.12	0.43			0.63	
Uniform Delay, d1	15.0		0.0				21.3	7.5			17.9	
Delay	15.3		8.8				15.6	14.8			15.6	
LOS	B		A				B	B			B	
Approach Delay		13.3						14.8			15.6	
Approach LOS		B						B			B	
Queue Length 50th (ft)	6		0				14	183			66	
Queue Length 95th (ft)	20		9				41	225			157	
Internal Link Dist (ft)		428			297			944			970	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)												
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary
Cycle Length: 65
Offset: 16 (25%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Control Type: Pretimed
Maximum v/c Ratio: 0.63
Intersection Signal Delay: 15.1 Intersection LOS: B
Intersection Capacity Utilization 34.5% ICU Level of Service A

Splits and Phases: 23: Mammoth Way & Deer Valley Road



CUMULATIVE TRAFFIC CONDITIONS
(TRAFFIX & SYNCRHO)

Antioch Aviano Adult Community TIA
Cumulative AM

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Del/ Veh	V/ C	Future LOS	Del/ Veh	V/ C	Change in
# 1 Lone Tree Way/Deer Valley Rd	C	xxxxx	0.767	C	xxxxx	0.779	+ 0.013 V/C
# 2 Deer Valley Road/Marita Drive	A	xxxxx	0.410	A	xxxxx	0.404	-0.006 V/C
# 3 Deer Valley Road/Prewitt Ranch	B	xxxxx	0.651	B	xxxxx	0.649	-0.002 V/C
# 4 Deer Valley Road/Wellness Way	A	xxxxx	0.509	A	xxxxx	0.511	+ 0.002 V/C
# 5 Deer Valley Road/Kaiser	A	xxxxx	0.457	A	xxxxx	0.463	+ 0.006 V/C
# 6 Deer Valley Road/Sand Creek Ro	B	xxxxx	0.632	B	xxxxx	0.666	+ 0.035 V/C
# 7 Kaiser/Sand Creek Road	A	xxxxx	0.322	A	xxxxx	0.322	+ 0.000 V/C
# 8 PARK/Sand Creek Road	A	xxxxx	0.586	A	xxxxx	0.589	+ 0.003 V/C
# 9 Edgewood South Access/Sand Cre	A	xxxxx	0.156	A	xxxxx	0.159	+ 0.003 V/C
# 10 Hillcrest Avenue/Sand Creek Ro	A	xxxxx	0.408	A	xxxxx	0.411	+ 0.003 V/C
# 11 Hillcrest Avenue/East Edgewood	A	xxxxx	0.498	A	xxxxx	0.498	+ 0.000 V/C
# 12 Hillcrest Ave/Prewett Ranch Dr	A	xxxxx	0.423	A	xxxxx	0.467	+ 0.044 V/C
# 13 Hillcrest Avenue/Vista Grande	A	xxxxx	0.411	A	xxxxx	0.453	+ 0.042 V/C
# 14 Lone Tree Way/Hillcrest Avenue	E	xxxxx	0.916	F	xxxxx	1.076	+ 0.160 V/C
# 15 Lone Tree Way/Vista Grande Dri	A	xxxxx	0.504	A	xxxxx	0.551	+ 0.047 V/C
# 16 Lone Tree Way/Heidorn Ranch Ro	B	xxxxx	0.651	C	xxxxx	0.784	+ 0.133 V/C
# 17 Lone Tree Way/Canada Valley Ro	E	xxxxx	0.931	F	xxxxx	1.061	+ 0.129 V/C
# 18 Lone Tree Way/SB SR-4 Bypass	B	xxxxx	0.649	C	xxxxx	0.746	+ 0.098 V/C
# 19 Lone Tree Way/NB SR-4 Bypass (	C	xxxxx	0.709	E	xxxxx	0.915	+ 0.206 V/C
# 20 Heidorn Ranch Road/Sand Creek	A	xxxxx	0.124	A	xxxxx	0.295	+ 0.172 V/C
# 21 SR-4 Bypass SB Ramps/Sand Cree	B	xxxxx	0.672	B	xxxxx	0.677	+ 0.006 V/C
# 22 SR-4 Bypass NB Ramps/Sand Cree	A	xxxxx	0.473	A	xxxxx	0.476	+ 0.003 V/C
# 23 Mammoth/Deer Valley	A	xxxxx	0.353	A	xxxxx	0.351	-0.002 V/C

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Antioch Aviano Adult Community TIA
Cumulative AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #1 Lone Tree Way/Deer Valley Rd

Cycle (sec): 130 Critical Vol./Cap.(X): 0.779
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 106 Level Of Service: C

Street Name:	Deer Valley Road						Lone Tree Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	15	32	0	15	32	0	15	32	0	15	32	0
Lanes:	2	0 2	0 1	2	0 1	1 0	1	0 2	1 0	1	0 2	1 0
Volume Module:												
Base Vol:	430	339	164	486	530	20	60	1115	485	295	1095	245
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	430	339	164	486	530	20	60	1115	485	295	1095	245
Added Vol:	0	0	-22	3	0	0	0	75	0	-6	12	2
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	430	339	142	489	530	20	60	1190	485	289	1107	247
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	430	339	142	489	530	20	60	1190	485	289	1107	247
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	430	339	142	489	530	20	60	1190	485	289	1107	247
RTOR Reduct:	0	0	142	0	0	0	0	0	0	0	0	0
RTOR Vol:	430	339	0	489	530	20	60	1190	485	289	1107	247
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	430	339	0	489	530	20	60	1190	485	289	1107	247
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	2.00	1.00	2.00	1.93	0.07	1.00	2.13	0.87	1.00	2.45	0.55
Final Sat.:	3000	3300	1650	3000	3180	120	1650	3517	1433	1650	4047	903
Capacity Analysis Module:												
Vol/Sat:	0.14	0.10	0.00	0.16	0.17	0.17	0.04	0.34	0.34	0.18	0.27	0.27
Crit Volume:		170		245					558	289		
Crit Moves:		****		****					****	****		

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Antioch Aviano Adult Community TIA
Cumulative AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #2 Deer Valley Road/Marita Drive

Cycle (sec): 100 Critical Vol./Cap.(X): 0.404
Loss Time (sec): 3 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 17 Level Of Service: A

Street Name:	Deer Valley Road									Marita Drive		
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 1	1 0	1	0 1	1 0	1	0 0	1 0	1	0 0	1 0
Volume Module:												
Base Vol:	65	905	33	195	1025	13	18	10	20	12	1	16
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	65	905	33	195	1025	13	18	10	20	12	1	16
Added Vol:	0	-22	0	0	-6	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	65	883	33	195	1019	13	18	10	20	12	1	16
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	65	883	33	195	1019	13	18	10	20	12	1	16
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	65	883	33	195	1019	13	18	10	20	12	1	16
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Vol:	65	883	33	195	1019	13	18	10	20	12	1	16
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	65	883	33	195	1019	13	18	10	20	12	1	16
Saturation Flow Module:												
Sat/Lane:	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.93	0.07	1.00	1.97	0.03	1.00	0.33	0.67	1.00	0.06	0.94
Final Sat.:	1720	3316	124	1720	3397	43	1720	573	1147	1720	101	1619
Capacity Analysis Module:												
Vol/Sat:	0.04	0.27	0.27	0.11	0.30	0.30	0.01	0.02	0.02	0.01	0.01	0.01
Crit Volume:		458	195					30		12		
Crit Moves:		****	****					****		****		

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Antioch Aviano Adult Community TIA
Cumulative AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #3 Deer Valley Road/Prewitt Ranch Drive

Cycle (sec): 100 Critical Vol./Cap.(X): 0.649
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 65 Level Of Service: B

Street Name:	Deer Valley Road						Prewitt Ranch Drive					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 1	1 0	1	0 1	1 0	1	0 0	1 0	1	0 0	1 0
Volume Module:												
Base Vol:	72	660	86	136	822	127	97	246	139	49	246	185
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	72	660	86	136	822	127	97	246	139	49	246	185
Added Vol:	0	-22	0	0	-6	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	72	638	86	136	816	127	97	246	139	49	246	185
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	72	638	86	136	816	127	97	246	139	49	246	185
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	72	638	86	136	816	127	97	246	139	49	246	185
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Vol:	72	638	86	136	816	127	97	246	139	49	246	185
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	72	638	86	136	816	127	97	246	139	49	246	185
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.76	0.24	1.00	1.73	0.27	1.00	0.64	0.36	1.00	0.57	0.43
Final Sat.:	1650	2908	392	1650	2856	444	1650	1054	596	1650	942	708
Capacity Analysis Module:												
Vol/Sat:	0.04	0.22	0.22	0.08	0.29	0.29	0.06	0.23	0.23	0.03	0.26	0.26
Crit Volume:	72					472	97				431	
Crit Moves:	****					****	****				****	

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Antioch Aviano Adult Community TIA
Cumulative AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #4 Deer Valley Road/Wellness Way

Cycle (sec): 100 Critical Vol./Cap.(X): 0.511
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 47 Level Of Service: A

Street Name:	Deer Valley Road						Wellness Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 2	0 1	2	0 1	1 0	1	0 0	1 0	1	0 0	1 0
Volume Module:												
Base Vol:	215	578	66	86	920	16	115	10	89	28	4	38
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	215	578	66	86	920	16	115	10	89	28	4	38
Added Vol:	0	21	0	0	5	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	215	599	66	86	925	16	115	10	89	28	4	38
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	215	599	66	86	925	16	115	10	89	28	4	38
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	215	599	66	86	925	16	115	10	89	28	4	38
RTOR Reduct:	0	0	28	0	0	0	0	0	0	0	0	0
RTOR Vol:	215	599	38	86	925	16	115	10	89	28	4	38
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	215	599	38	86	925	16	115	10	89	28	4	38
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	2.00	1.97	0.03	1.00	0.10	0.90	1.00	0.10	0.90
Final Sat.:	1650	3300	1650	3000	3244	56	1650	167	1483	1650	157	1493
Capacity Analysis Module:												
Vol/Sat:	0.13	0.18	0.02	0.03	0.29	0.29	0.07	0.06	0.06	0.02	0.03	0.03
Crit Volume:	215					471	115					42
Crit Moves:	****					****	****					****

Antioch Aviano Adult Community TIA
Cumulative AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #5 Deer Valley Road/Kaiser

Cycle (sec): 100 Critical Vol./Cap.(X): 0.463
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 42 Level Of Service: A

Street Name:	Deer Valley Road						Kaiser					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0 2	0 1	1	0 2	0 0	0	0 0	0 0	1	0 0	0 1
Volume Module:												
Base Vol:	0	761	124	335	702	0	0	0	0	70	0	98
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	761	124	335	702	0	0	0	0	70	0	98
Added Vol:	0	21	0	0	5	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	782	124	335	707	0	0	0	0	70	0	98
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	782	124	335	707	0	0	0	0	70	0	98
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	782	124	335	707	0	0	0	0	70	0	98
RTOR Reduct:	0	0	70	0	0	0	0	0	0	0	0	98
RTOR Vol:	0	782	54	335	707	0	0	0	0	70	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	782	54	335	707	0	0	0	0	70	0	0
Saturation Flow Module:												
Sat/Lane:	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	2.00	1.00	1.00	2.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Final Sat.:	0	3440	1720	1720	3440	0	0	0	0	1720	0	1720
Capacity Analysis Module:												
Vol/Sat:	0.00	0.23	0.03	0.19	0.21	0.00	0.00	0.00	0.00	0.04	0.00	0.00
Crit Volume:		391		335				0		70		
Crit Moves:		****		****						****		

Antioch Aviano Adult Community TIA
Cumulative AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #6 Deer Valley Road/Sand Creek Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.666
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 68 Level Of Service: B

Street Name:	Deer Valley Road						Sand Creek Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 1	1 0	1	0 1	1 0	1	0 1	1 0	1	0 2	0 1
Volume Module:												
Base Vol:	77	677	132	311	446	15	189	257	125	33	275	109
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	77	677	132	311	446	15	189	257	125	33	275	109
Added Vol:	0	21	94	0	5	0	0	0	0	16	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	77	698	226	311	451	15	189	257	125	49	275	109
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	77	698	226	311	451	15	189	257	125	49	275	109
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	77	698	226	311	451	15	189	257	125	49	275	109
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	109
RTOR Vol:	77	698	226	311	451	15	189	257	125	49	275	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	77	698	226	311	451	15	189	257	125	49	275	0
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.51	0.49	1.00	1.94	0.06	1.00	1.35	0.65	1.00	2.00	1.00
Final Sat.:	1650	2493	807	1650	3194	106	1650	2220	1080	1650	3300	1650
Capacity Analysis Module:												
Vol/Sat:	0.05	0.28	0.28	0.19	0.14	0.14	0.11	0.12	0.12	0.03	0.08	0.00
Crit Volume:		462		311			189				138	
Crit Moves:		****		****			****				****	

Antioch Aviano Adult Community TIA
Cumulative AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #7 Kaiser/Sand Creek Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.322
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 34 Level Of Service: A

Street Name:	Kaiser						Sand Creek Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2	0 0	1 1	1	0 0	1 0	1	0 2	1 0	2	0 2	1 0
Volume Module:												
Base Vol:	60	69	63	25	32	17	41	400	259	325	352	123
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	60	69	63	25	32	17	41	400	259	325	352	123
Added Vol:	0	0	0	0	0	0	0	94	0	0	16	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	60	69	63	25	32	17	41	494	259	325	368	123
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	60	69	63	25	32	17	41	494	259	325	368	123
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	60	69	63	25	32	17	41	494	259	325	368	123
RTOR Reduct:	0	0	63	0	0	0	0	0	0	0	0	0
RTOR Vol:	60	69	0	25	32	17	41	494	259	325	368	123
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	60	69	0	25	32	17	41	494	259	325	368	123
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	0.91	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00
Lanes:	2.00	1.00	1.00	1.00	0.65	0.35	1.00	2.00	1.00	2.00	2.25	0.75
Final Sat.:	3000	1650	1500	1650	1078	572	1650	3300	1650	3000	3710	1240
Capacity Analysis Module:												
Vol/Sat:	0.02	0.04	0.00	0.02	0.03	0.03	0.02	0.15	0.16	0.11	0.10	0.10
Crit Volume:		69		25					259	163		
Crit Moves:		****		****					****	****		

Antioch Aviano Adult Community TIA
Cumulative AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #8 PARK/Sand Creek Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.589
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 56 Level Of Service: A

Street Name:	PARK						Sand Creek Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	0 1	0	1	0 0 1	0	1	0 2 1	0	1	0 2 1 0
Volume Module:												
Base Vol:	99	31	252	104	19	186	346	238	31	137	512	190
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	99	31	252	104	19	186	346	238	31	137	512	190
Added Vol:	0	0	0	0	0	0	0	94	0	0	16	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	99	31	252	104	19	186	346	332	31	137	528	190
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	99	31	252	104	19	186	346	332	31	137	528	190
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	99	31	252	104	19	186	346	332	31	137	528	190
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Vol:	99	31	252	104	19	186	346	332	31	137	528	190
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	99	31	252	104	19	186	346	332	31	137	528	190
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.11	0.89	1.00	0.09	0.91	1.00	2.74	0.26	1.00	2.21	0.79
Final Sat.:	1650	181	1469	1650	153	1497	1650	4527	423	1650	3640	1310
Capacity Analysis Module:												
Vol/Sat:	0.06	0.17	0.17	0.06	0.12	0.12	0.21	0.07	0.07	0.08	0.15	0.15
Crit Volume:			283	104			346				239	
Crit Moves:			****	****			****				****	

Antioch Aviano Adult Community TIA
Cumulative AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #9 Edgewood South Access/Sand Creek Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.159
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 22 Level Of Service: A

Street Name:	Edgewood South Access						Sand Creek Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0	0 0	1	0	0 0 1	1	0	3 0 0	0	0	2 1 0
Volume Module:												
Base Vol:	0	0	0	0	0	0	0	595	0	0	840	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	595	0	0	840	0
Added Vol:	0	0	0	0	0	0	0	94	0	0	16	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	0	0	0	0	689	0	0	856	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	0	0	0	0	689	0	0	856	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	0	0	0	0	689	0	0	856	0
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Vol:	0	0	0	0	0	0	0	689	0	0	856	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	0	0	0	0	689	0	0	856	0
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	3.00	0.00	0.00	3.00	0.00
Final Sat.:	0	0	0	1800	0	1800	1800	5400	0	0	5400	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.00	0.00	0.16	0.00
Crit Volume:	0					0		0			285	
Crit Moves:							****				****	

Antioch Aviano Adult Community TIA
Cumulative AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #10 Hillcrest Avenue/Sand Creek Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.411
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 39 Level Of Service: A

Street Name:	Hillcrest Avenue						Sand Creek Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2	0	1 1 0	1	0	1 1 1	2	0	2 1 0	1	0	2 1 0
Volume Module:												
Base Vol:	290	688	130	4	183	423	392	69	133	83	127	5
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	290	688	130	4	183	423	392	69	133	83	127	5
Added Vol:	0	0	0	0	0	0	0	94	0	0	16	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	290	688	130	4	183	423	392	163	133	83	143	5
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	290	688	130	4	183	423	392	163	133	83	143	5
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	290	688	130	4	183	423	392	163	133	83	143	5
RTOR Reduct:	0	0	0	0	0	216	0	0	0	0	0	0
RTOR Vol:	290	688	130	4	183	207	392	163	133	83	143	5
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	290	688	130	4	183	207	392	163	133	83	143	5
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	0.91	1.00	1.00	1.00	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	1.68	0.32	1.00	1.41	1.59	2.00	2.00	1.00	1.00	2.90	0.10
Final Sat.:	3000	2776	524	1650	2320	2390	3000	3300	1650	1650	4783	167
Capacity Analysis Module:												
Vol/Sat:	0.10	0.25	0.25	0.00	0.08	0.09	0.13	0.05	0.08	0.05	0.03	0.03
Crit Volume:		409		4			196				49	
Crit Moves:		****		****			****				****	

Antioch Aviano Adult Community TIA
Cumulative AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #11 Hillcrest Avenue/East Edgewood Access

Cycle (sec): 100 Critical Vol./Cap.(X): 0.498
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 45 Level Of Service: A

Street Name:	Hillcrest Avenue						East Edgewood Access					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	1 1 0	1	0	1 1 0	1	0	0 1 0	1	0	0 1 0
Volume Module:												
Base Vol:	0	917	171	204	582	0	0	0	0	30	0	108
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	917	171	204	582	0	0	0	0	30	0	108
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	917	171	204	582	0	0	0	0	30	0	108
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	917	171	204	582	0	0	0	0	30	0	108
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	917	171	204	582	0	0	0	0	30	0	108
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Vol:	0	917	171	204	582	0	0	0	0	30	0	108
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	917	171	204	582	0	0	0	0	30	0	108
Saturation Flow Module:												
Sat/Lane:	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.69	0.31	1.00	2.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00
Final Sat.:	1720	2899	541	1720	3440	0	1720	1720	0	1720	0	1720
Capacity Analysis Module:												
Vol/Sat:	0.00	0.32	0.32	0.12	0.17	0.00	0.00	0.00	0.00	0.02	0.00	0.06
Crit Volume:			544	204			0					108
Crit Moves:			****	****								****

Antioch Aviano Adult Community TIA
Cumulative AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #12 Hillcrest Ave/Prewett Ranch Dr

Cycle (sec): 100 Critical Vol./Cap.(X): 0.467
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 43 Level Of Service: A

Street Name:	Hillcrest Ave						Prewett Dr					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 1	1 0	1	0 1	1 0	1	0 0	1 0	1	0 0	1 0
Volume Module:												
Base Vol:	50	893	78	14	662	109	147	47	85	42	47	5
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	50	893	78	14	662	109	147	47	85	42	47	5
Added Vol:	0	144	0	0	22	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	50	1037	78	14	684	109	147	47	85	42	47	5
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	50	1037	78	14	684	109	147	47	85	42	47	5
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	50	1037	78	14	684	109	147	47	85	42	47	5
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Vol:	50	1037	78	14	684	109	147	47	85	42	47	5
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	50	1037	78	14	684	109	147	47	85	42	47	5
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.86	0.14	1.00	1.73	0.27	1.00	0.36	0.64	1.00	0.90	0.10
Final Sat.:	1650	3069	231	1650	2846	454	1650	588	1063	1650	1491	159
Capacity Analysis Module:												
Vol/Sat:	0.03	0.34	0.34	0.01	0.24	0.24	0.09	0.08	0.08	0.03	0.03	0.03
Crit Volume:		558			14			147			52	
Crit Moves:		****			****			****			****	

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Antioch Aviano Adult Community TIA
Cumulative AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #13 Hillcrest Avenue/Vista Grande Drive

Cycle (sec): 100 Critical Vol./Cap.(X): 0.453
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 34 Level Of Service: A

Street Name:	Hillcrest Avenue						Vista Grande Drive					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0 1	1 0	1	0 2	0 0	0	0 0	0 0	1	0 0	0 1
Volume Module:												
Base Vol:	0	1058	67	67	745	0	0	0	0	77	0	92
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1058	67	67	745	0	0	0	0	77	0	92
Added Vol:	0	144	0	0	22	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1202	67	67	767	0	0	0	0	77	0	92
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1202	67	67	767	0	0	0	0	77	0	92
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1202	67	67	767	0	0	0	0	77	0	92
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	67
RTOR Vol:	0	1202	67	67	767	0	0	0	0	77	0	25
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1202	67	67	767	0	0	0	0	77	0	25
Saturation Flow Module:												
Sat/Lane:	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	1.89	0.11	1.00	2.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Final Sat.:	0	3258	182	1720	3440	0	0	0	0	1720	0	1720
Capacity Analysis Module:												
Vol/Sat:	0.00	0.37	0.37	0.04	0.22	0.00	0.00	0.00	0.00	0.04	0.00	0.01
Crit Volume:		635			67				0		77	
Crit Moves:		****			****						****	

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Antioch Aviano Adult Community TIA
Cumulative AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #14 Lone Tree Way/Hillcrest Avenue

Cycle (sec): 130 Critical Vol./Cap.(X): 1.076
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 180 Level Of Service: F

Street Name:	Hillcrest Avenue						Lone Tree Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 1	1 0	2	0 2	0 1	1	0 2	1 0	1	0 3	0 1
Volume Module:												
Base Vol:	89	444	526	746	227	353	219	773	493	65	1068	556
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	89	444	526	746	227	353	219	773	493	65	1068	556
Added Vol:	0	-64	208	64	-16	-22	0	142	0	38	30	16
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	89	380	734	810	211	331	219	915	493	103	1098	572
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	89	380	734	810	211	331	219	915	493	103	1098	572
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	89	380	734	810	211	331	219	915	493	103	1098	572
RTOR Reduct:	0	0	0	0	0	219	0	0	0	0	0	446
RTOR Vol:	89	380	734	810	211	112	219	915	493	103	1098	127
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	89	380	734	810	211	112	219	915	493	103	1098	127
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	1.00	2.00	2.00	1.00	1.00	2.00	1.00	1.00	3.00	1.00
Final Sat.:	1650	1650	1650	3000	3300	1650	1650	3300	1650	1650	4950	1650
Capacity Analysis Module:												
Vol/Sat:	0.05	0.23	0.44	0.27	0.06	0.07	0.13	0.28	0.30	0.06	0.22	0.08
Crit Volume:			734	405					493	103		
Crit Moves:			****	****					****	****		

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Antioch Aviano Adult Community TIA
Cumulative AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #15 Lone Tree Way/Vista Grande Drive

Cycle (sec): 130 Critical Vol./Cap.(X): 0.551
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 41 Level Of Service: A

Street Name:	Vista Grande Drive						Lone Tree Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 0	1 0	1	0 0	1 0	1	0 2	1 0	1	0 2	1 0
Volume Module:												
Base Vol:	89	38	110	53	29	51	109	1606	61	50	1635	38
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	89	38	110	53	29	51	109	1606	61	50	1635	38
Added Vol:	0	0	1	1	0	0	0	414	0	1	84	1
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	89	38	111	54	29	51	109	2020	61	51	1719	39
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	89	38	111	54	29	51	109	2020	61	51	1719	39
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	89	38	111	54	29	51	109	2020	61	51	1719	39
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Vol:	89	38	111	54	29	51	109	2020	61	51	1719	39
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	89	38	111	54	29	51	109	2020	61	51	1719	39
Saturation Flow Module:												
Sat/Lane:	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.26	0.74	1.00	0.36	0.64	1.00	2.91	0.09	1.00	2.93	0.07
Final Sat.:	1720	439	1281	1720	624	1097	1720	5009	151	1720	5046	114
Capacity Analysis Module:												
Vol/Sat:	0.05	0.09	0.09	0.03	0.05	0.05	0.06	0.40	0.40	0.03	0.34	0.34
Crit Volume:			149	54					694	51		
Crit Moves:			****	****					****	****		

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Antioch Aviano Adult Community TIA
Cumulative AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #16 Lone Tree Way/Heidorn Ranch Road

Cycle (sec): 120 Critical Vol./Cap.(X): 0.784
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 105 Level Of Service: C

Street Name:	Heidorn Ranch Road						Lone Tree Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2	0 1	0 1	1	0 0 1	0	1	0 2	1 0	1	0 2	1 1
Volume Module:												
Base Vol:	107	19	138	25	5	1	8	2134	184	217	1905	25
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	107	19	138	25	5	1	8	2134	184	217	1905	25
Added Vol:	0	0	219	0	0	0	0	416	0	34	85	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	107	19	357	25	5	1	8	2550	184	251	1990	25
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	107	19	357	25	5	1	8	2550	184	251	1990	25
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	107	19	357	25	5	1	8	2550	184	251	1990	25
RTOR Reduct:	0	0	251	0	0	0	0	0	0	0	0	25
RTOR Vol:	107	19	106	25	5	1	8	2550	184	251	1990	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	107	19	106	25	5	1	8	2550	184	251	1990	0
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91
Lanes:	2.00	1.00	1.00	1.00	0.83	0.17	1.00	2.80	0.20	1.00	3.00	1.00
Final Sat.:	3000	1650	1650	1650	1375	275	1650	4617	333	1650	4950	1500
Capacity Analysis Module:												
Vol/Sat:	0.04	0.01	0.06	0.02	0.00	0.00	0.00	0.55	0.55	0.15	0.40	0.00
Crit Volume:			106	25				911		251		
Crit Moves:			****	****				****		****		

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Antioch Aviano Adult Community TIA
Cumulative AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #17 Lone Tree Way/Canada Valley Road

Cycle (sec): 100 Critical Vol./Cap.(X): 1.061
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 180 Level Of Service: F

Street Name:	Canada Valley Road						Lone Tree Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2	0 0	1 1	1	0 1	0 1	1	0 3	0 1	2	0 3	0 1
Volume Module:												
Base Vol:	41	41	162	497	65	155	90	2184	106	492	1917	303
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	41	41	162	497	65	155	90	2184	106	492	1917	303
Added Vol:	0	0	0	2	0	0	0	635	0	0	119	1
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	41	41	162	499	65	155	90	2819	106	492	2036	304
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	41	41	162	499	65	155	90	2819	106	492	2036	304
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	41	41	162	499	65	155	90	2819	106	492	2036	304
RTOR Reduct:	0	0	162	0	0	90	0	0	23	0	0	304
RTOR Vol:	41	41	0	499	65	65	90	2819	83	492	2036	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	41	41	0	499	65	65	90	2819	83	492	2036	0
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	0.91	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00
Lanes:	2.00	1.00	1.00	1.00	1.00	1.00	1.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3000	1650	1500	1650	1650	1650	1650	4950	1650	3000	4950	1650
Capacity Analysis Module:												
Vol/Sat:	0.01	0.02	0.00	0.30	0.04	0.04	0.05	0.57	0.05	0.16	0.41	0.00
Crit Volume:		41		499				940		246		
Crit Moves:		****		****				****		****		

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Antioch Aviano Adult Community TIA
Cumulative AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #18 Lone Tree Way/SB SR-4 Bypass

Cycle (sec): 100 Critical Vol./Cap.(X): 0.746
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 73 Level Of Service: C

Street Name:	SB SR-4 Bypass						Lone Tree Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Protected			Permitted			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0 0	0 0	1	1 0	0 1	0	0 3	0 1	2	0 3	0 0
Volume Module:												
Base Vol:	0	0	0	364	0	139	0	1701	886	250	2610	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	364	0	139	0	1701	886	250	2610	0
Added Vol:	0	0	0	-22	0	-16	0	637	0	36	136	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	342	0	123	0	2338	886	286	2746	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	342	0	123	0	2338	886	286	2746	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	342	0	123	0	2338	886	286	2746	0
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Vol:	0	0	0	342	0	123	0	2338	886	286	2746	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	342	0	123	0	2338	886	286	2746	0
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	0.00	3.00	1.00	2.00	3.00	0.00
Final Sat.:	0	0	0	3000	0	1650	0	4950	1650	3000	4950	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.11	0.00	0.07	0.00	0.47	0.54	0.10	0.55	0.00
Crit Volume:		0		171					886	143		
Crit Moves:				****					****	****		

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Antioch Aviano Adult Community TIA
Cumulative AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #19 Lone Tree Way/NB SR-4 Bypass (Jeffrey Way)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.915
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 180 Level Of Service: E

Street Name:	NB SR-4 Bypass (Jeffrey Way)						Lone Tree Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Permitted			Permitted			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	1 0	0 1	0	0 0	0 0	0	0 3	0 1	1	0 3	0 1
Volume Module:												
Base Vol:	850	0	482	0	0	0	0	1696	369	137	2010	441
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	850	0	482	0	0	0	0	1696	369	137	2010	441
Added Vol:	0	0	236	0	0	0	0	679	-64	0	172	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	850	0	718	0	0	0	0	2375	305	137	2182	441
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	850	0	718	0	0	0	0	2375	305	137	2182	441
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	850	0	718	0	0	0	0	2375	305	137	2182	441
RTOR Reduct:	0	0	137	0	0	0	0	0	305	0	0	0
RTOR Vol:	850	0	581	0	0	0	0	2375	0	137	2182	441
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	850	0	581	0	0	0	0	2375	0	137	2182	441
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	0.00	1.00	0.00	0.00	0.00	0.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	3000	0	1650	0	0	0	0	4950	1650	1650	4950	1650
Capacity Analysis Module:												
Vol/Sat:	0.28	0.00	0.35	0.00	0.00	0.00	0.00	0.48	0.00	0.08	0.44	0.27
Crit Volume:			581		0			792		137		
Crit Moves:			****					****		****		

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Antioch Aviano Adult Community TIA
Cumulative AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #20 Heidorn Ranch Road/Sand Creek Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.295
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 32 Level Of Service: A

Street Name:	Heidorn Ranch Road						Sand Creek Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	0 1	0	1	0 1	0	1	1 0	1	0	2 0 1
Volume Module:												
Base Vol:	5	6	11	50	4	19	16	195	5	11	214	171
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	5	6	11	50	4	19	16	195	5	11	214	171
Added Vol:	0	211	0	0	39	11	72	21	0	0	5	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	5	217	11	50	43	30	88	216	5	11	219	171
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	5	217	11	50	43	30	88	216	5	11	219	171
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	5	217	11	50	43	30	88	216	5	11	219	171
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	50
RTOR Vol:	5	217	11	50	43	30	88	216	5	11	219	121
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	5	217	11	50	43	30	88	216	5	11	219	121
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.95	0.05	1.00	0.59	0.41	1.00	1.95	0.05	1.00	2.00	1.00
Final Sat.:	1650	1570	80	1650	972	678	1650	3225	75	1650	3300	1650
Capacity Analysis Module:												
Vol/Sat:	0.00	0.14	0.14	0.03	0.04	0.04	0.05	0.07	0.07	0.01	0.07	0.07
Crit Volume:			228	50			88					121
Crit Moves:			****	****			****					****

Antioch Aviano Adult Community TIA
Cumulative AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #21 SR-4 Bypass SB Ramps/Sand Creek Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.677
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 58 Level Of Service: B

Street Name:	SR-4 Bypass SB Ramps						Sand Creek Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Ignore		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0	0 0	1	0	1 0	1	0	2 0	1	0	2 0 1
Volume Module:												
Base Vol:	0	0	0	900	0	76	0	382	255	0	508	275
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	900	0	76	0	382	255	0	508	275
Added Vol:	0	0	0	10	0	5	0	21	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	910	0	81	0	403	255	0	508	275
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	910	0	81	0	403	255	0	508	275
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	910	0	81	0	403	255	0	508	275
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Vol:	0	0	0	910	0	81	0	403	255	0	508	275
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	910	0	81	0	403	255	0	508	275
Saturation Flow Module:												
Sat/Lane:	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.00	0.00	1.00	1.00	1.00	0.00	2.00	1.00	0.00	2.00	1.00
Final Sat.:	0	0	0	1720	1720	1720	0	3440	1720	0	3440	1720
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.53	0.00	0.05	0.00	0.12	0.15	0.00	0.15	0.16
Crit Volume:		0		910					255	0		
Crit Moves:				****					****	****		

Antioch Aviano Adult Community TIA
Cumulative AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #22 SR-4 Bypass NB Ramps/Sand Creek Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.476
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 51 Level Of Service: A

Street Name:	SR-4 Bypass NB Ramps						Sand Creek Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Permitted			Protected			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	1 0 1	0	0	0 0 0	2	0	2 0 0	0	0	2 0 1
Volume Module:												
Base Vol:	14	0	293	0	0	0	307	975	0	0	534	653
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	14	0	293	0	0	0	307	975	0	0	534	653
Added Vol:	0	0	0	0	0	0	21	10	0	0	0	70
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	14	0	293	0	0	0	328	985	0	0	534	723
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	14	0	293	0	0	0	328	985	0	0	534	723
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	14	0	293	0	0	0	328	985	0	0	534	723
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Vol:	14	0	293	0	0	0	328	985	0	0	534	723
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	14	0	293	0	0	0	328	985	0	0	534	723
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	1.00	0.00	0.00	0.00	2.00	2.00	0.00	0.00	2.00	1.00
Final Sat.:	1650	1650	1650	0	0	0	3000	3300	0	0	3300	1650
Capacity Analysis Module:												
Vol/Sat:	0.01	0.00	0.18	0.00	0.00	0.00	0.11	0.30	0.00	0.00	0.16	0.44
Crit Volume:			293		0			493			267	
Crit Moves:			****					****				

Antioch Aviano Adult Community TIA
Cumulative AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #23 Mammoth/Deer Valley

Cycle (sec): 100 Critical Vol./Cap.(X): 0.351
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 35 Level Of Service: A

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L		T	R	L		T	R	L		T	R	L		T	R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0		0	0	0		0	0	0		0	0	0		0	0
Lanes:	1	0	2	0 0	0	0	1	0	1	0	0	1	0	0	0	1
Volume Module:																
Base Vol:	20		711	0	0		982	22	85		0	40	0		0	0
Growth Adj:	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
Initial Bse:	20		711	0	0		982	22	85		0	40	0		0	0
Added Vol:	0		-22	0	0		-6	0	0		0	0	0		0	0
PasserByVol:	0		0	0	0		0	0	0		0	0	0		0	0
Initial Fut:	20		689	0	0		976	22	85		0	40	0		0	0
User Adj:	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
PHF Adj:	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
PHF Volume:	20		689	0	0		976	22	85		0	40	0		0	0
Reduct Vol:	0		0	0	0		0	0	0		0	0	0		0	0
Reduced Vol:	20		689	0	0		976	22	85		0	40	0		0	0
RTOR Reduct:	0		0	0	0		0	0	0		0	20	0		0	0
RTOR Vol:	20		689	0	0		976	22	85		0	20	0		0	0
PCE Adj:	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
MLF Adj:	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
FinalVolume:	20		689	0	0		976	22	85		0	20	0		0	0
Saturation Flow Module:																
Sat/Lane:	1720		1720	1720	1720		1720	1720	1720		1720	1720	1720		1720	1720
Adjustment:	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
Lanes:	1.00		2.00	0.00	0.00		1.96	0.04	1.00		0.00	1.00	0.00		0.00	0.00
Final Sat.:	1720		3440	0	0		3364	76	1720		0	1720	0		0	0
Capacity Analysis Module:																
Vol/Sat:	0.01		0.20	0.00	0.00		0.29	0.29	0.05		0.00	0.01	0.00		0.00	0.00
Crit Volume:	20							499	85						0	
Crit Moves:	****							****	****							

Antioch Aviano Adult Community TIA
Cumulative PM

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Del/ Veh	V/ C	Future LOS	Del/ Veh	V/ C	Change in
# 1 Lone Tree Way/Deer Valley Rd	B	xxxxx	0.681	B	xxxxx	0.678	-0.003 V/C
# 2 Deer Valley Road/Marita Drive	A	xxxxx	0.341	A	xxxxx	0.336	-0.005 V/C
# 3 Deer Valley Road/Prewitt Ranch	B	xxxxx	0.625	B	xxxxx	0.621	-0.004 V/C
# 4 Deer Valley Road/Wellness Way	B	xxxxx	0.616	B	xxxxx	0.620	+ 0.004 V/C
# 5 Deer Valley Road/Kaiser	A	xxxxx	0.478	A	xxxxx	0.483	+ 0.005 V/C
# 6 Deer Valley Road/Sand Creek Ro	A	xxxxx	0.595	B	xxxxx	0.662	+ 0.066 V/C
# 7 Kaiser/Sand Creek Road	A	xxxxx	0.430	A	xxxxx	0.430	+ 0.000 V/C
# 8 PARK/Sand Creek Road	A	xxxxx	0.472	A	xxxxx	0.479	+ 0.007 V/C
# 9 Edgewood South Access/Sand Cre	A	xxxxx	0.181	A	xxxxx	0.188	+ 0.007 V/C
# 10 Hillcrest Avenue/Sand Creek Ro	A	xxxxx	0.593	A	xxxxx	0.593	+ 0.000 V/C
# 11 Hillcrest Avenue/East Edgewood	A	xxxxx	0.455	A	xxxxx	0.455	+ 0.000 V/C
# 12 Hillcrest Ave/Prewett Ranch Dr	A	xxxxx	0.545	A	xxxxx	0.587	+ 0.042 V/C
# 13 Hillcrest Avenue/Vista Grande	A	xxxxx	0.406	A	xxxxx	0.446	+ 0.040 V/C
# 14 Lone Tree Way/Hillcrest Avenue	F	xxxxx	1.007	F	xxxxx	1.186	+ 0.179 V/C
# 15 Lone Tree Way/Vista Grande Dri	B	xxxxx	0.637	B	xxxxx	0.686	+ 0.049 V/C
# 16 Lone Tree Way/Heidorn Ranch Ro	C	xxxxx	0.745	E	xxxxx	0.923	+ 0.179 V/C
# 17 Lone Tree Way/Canada Valley Ro	F	xxxxx	1.128	F	xxxxx	1.191	+ 0.063 V/C
# 18 Lone Tree Way/SB SR-4 Bypass	D	xxxxx	0.829	E	xxxxx	0.934	+ 0.105 V/C
# 19 Lone Tree Way/NB SR-4 Bypass (	E	xxxxx	0.990	F	xxxxx	1.073	+ 0.083 V/C
# 20 Heidorn Ranch Road/Sand Creek	A	xxxxx	0.222	A	xxxxx	0.296	+ 0.074 V/C
# 21 SR-4 Bypass SB Ramps/Sand Cree	D	xxxxx	0.824	D	xxxxx	0.861	+ 0.037 V/C
# 22 SR-4 Bypass NB Ramps/Sand Cree	A	xxxxx	0.565	A	xxxxx	0.584	+ 0.019 V/C
# 23 Mammoth/Deer Valley	A	xxxxx	0.353	A	xxxxx	0.348	-0.005 V/C

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Antioch Aviano Adult Community TIA
Cumulative PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #1 Lone Tree Way/Deer Valley Rd

Cycle (sec): 130 Critical Vol./Cap.(X): 0.678
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 106 Level Of Service: B

Street Name:	Deer Valley Road						Lone Tree Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	15	32	0	15	32	0	15	32	0	15	32	0
Lanes:	2	0 2	0 1	2	0 1	1 0	1	0 2	1 0	1	0 2	1 0
Volume Module:												
Base Vol:	373	364	167	307	355	24	124	1279	311	199	1119	293
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	373	364	167	307	355	24	124	1279	311	199	1119	293
Added Vol:	0	0	-17	7	0	0	0	25	0	-14	78	8
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	373	364	150	314	355	24	124	1304	311	185	1197	301
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	373	364	150	314	355	24	124	1304	311	185	1197	301
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	373	364	150	314	355	24	124	1304	311	185	1197	301
RTOR Reduct:	0	0	150	0	0	0	0	0	0	0	0	0
RTOR Vol:	373	364	0	314	355	24	124	1304	311	185	1197	301
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	373	364	0	314	355	24	124	1304	311	185	1197	301
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	2.00	1.00	2.00	1.87	0.13	1.00	2.42	0.58	1.00	2.40	0.60
Final Sat.:	3000	3300	1650	3000	3091	209	1650	3997	953	1650	3955	995
Capacity Analysis Module:												
Vol/Sat:	0.12	0.11	0.00	0.10	0.11	0.11	0.08	0.33	0.33	0.11	0.30	0.30
Crit Volume:	187				190				538	185		
Crit Moves:	****				****				****	****		

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Antioch Aviano Adult Community TIA
Cumulative PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #2 Deer Valley Road/Marita Drive

Cycle (sec): 100 Critical Vol./Cap.(X): 0.336
Loss Time (sec): 3 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 15 Level Of Service: A

Street Name:	Deer Valley Road									Marita Drive					
Approach:	North Bound				South Bound				East Bound				West Bound		
Movement:	L	T	R		L	T	R		L	T	R		L	T	R
Control:	Protected				Protected				Permitted				Permitted		
Rights:	Include				Include				Include				Include		
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0
Lanes:	1	0 1	1	0	1	0 1	1	0	1	0 0	1	0	1	0 1	0
Volume Module:															
Base Vol:	15	813	5		32	813	21		15	0	8		42	4	126
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Initial Bse:	15	813	5		32	813	21		15	0	8		42	4	126
Added Vol:	0	-17	0		0	-14	0		0	0	0		0	0	0
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0
Initial Fut:	15	796	5		32	799	21		15	0	8		42	4	126
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
PHF Volume:	15	796	5		32	799	21		15	0	8		42	4	126
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0
Reduced Vol:	15	796	5		32	799	21		15	0	8		42	4	126
RTOR Reduct:	0	0	0		0	0	0		0	0	0		0	0	0
RTOR Vol:	15	796	5		32	799	21		15	0	8		42	4	126
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
FinalVolume:	15	796	5		32	799	21		15	0	8		42	4	126
Saturation Flow Module:															
Sat/Lane:	1720	1720	1720		1720	1720	1720		1720	1720	1720		1720	1720	1720
Adjustment:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Lanes:	1.00	1.99	0.01		1.00	1.95	0.05		1.00	0.00	1.00		1.00	0.03	0.97
Final Sat.:	1720	3419	21		1720	3352	88		1720	0	1720		1720	53	1667
Capacity Analysis Module:															
Vol/Sat:	0.01	0.23	0.23		0.02	0.24	0.24		0.01	0.00	0.00		0.02	0.08	0.08
Crit Volume:		401				32				15					130
Crit Moves:		****				****				****					****

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Antioch Aviano Adult Community TIA
Cumulative PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #3 Deer Valley Road/Prewitt Ranch Drive

Cycle (sec): 100 Critical Vol./Cap.(X): 0.621
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 60 Level Of Service: B

Street Name:	Deer Valley Road									Prewitt Ranch Drive					
Approach:	North Bound				South Bound				East Bound				West Bound		
Movement:	L	T	R		L	T	R		L	T	R		L	T	R
Control:	Protected				Protected				Protected				Protected		
Rights:	Include				Include				Include				Include		
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0
Lanes:	1	0 1	1	0	1	0 1	1	0	1	0 0	1	0	1	0 1	0
Volume Module:															
Base Vol:	275	747	169		146	763	93		26	84	166		78	99	36
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Initial Bse:	275	747	169		146	763	93		26	84	166		78	99	36
Added Vol:	0	-17	0		0	-14	0		0	0	0		0	0	0
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0
Initial Fut:	275	730	169		146	749	93		26	84	166		78	99	36
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
PHF Volume:	275	730	169		146	749	93		26	84	166		78	99	36
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0
Reduced Vol:	275	730	169		146	749	93		26	84	166		78	99	36
RTOR Reduct:	0	0	0		0	0	0		0	0	0		0	0	0
RTOR Vol:	275	730	169		146	749	93		26	84	166		78	99	36
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
FinalVolume:	275	730	169		146	749	93		26	84	166		78	99	36
Saturation Flow Module:															
Sat/Lane:	1650	1650	1650		1650	1650	1650		1650	1650	1650		1650	1650	1650
Adjustment:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Lanes:	1.00	1.62	0.38		1.00	1.78	0.22		1.00	0.34	0.66		1.00	0.73	0.27
Final Sat.:	1650	2680	620		1650	2936	364		1650	554	1096		1650	1210	440
Capacity Analysis Module:															
Vol/Sat:	0.17	0.27	0.27		0.09	0.26	0.26		0.02	0.15	0.15		0.05	0.08	0.08
Crit Volume:	275						421			250			78		
Crit Moves:	****						****			****			****		

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Antioch Aviano Adult Community TIA
Cumulative PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #4 Deer Valley Road/Wellness Way

Cycle (sec): 100 Critical Vol./Cap.(X): 0.620
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 60 Level Of Service: B

Street Name:	Deer Valley Road						Wellness Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 2	0 1	2	0 1	1 0	1	0 0	1 0	1	0 0	1 0
Volume Module:												
Base Vol:	239	1090	31	45	902	26	30	3	254	56	6	74
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	239	1090	31	45	902	26	30	3	254	56	6	74
Added Vol:	0	18	0	0	13	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	239	1108	31	45	915	26	30	3	254	56	6	74
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	239	1108	31	45	915	26	30	3	254	56	6	74
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	239	1108	31	45	915	26	30	3	254	56	6	74
RTOR Reduct:	0	0	31	0	0	0	0	0	0	0	0	0
RTOR Vol:	239	1108	0	45	915	26	30	3	254	56	6	74
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	239	1108	0	45	915	26	30	3	254	56	6	74
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	2.00	1.94	0.06	1.00	0.01	0.99	1.01	0.07	0.92
Final Sat.:	1650	3300	1650	3000	3209	91	1650	19	1631	1650	124	1526
Capacity Analysis Module:												
Vol/Sat:	0.14	0.34	0.00	0.02	0.29	0.29	0.02	0.16	0.16	0.03	0.05	0.05
Crit Volume:	239				471			257		56		
Crit Moves:	****				****			****		****		

Antioch Aviano Adult Community TIA
Cumulative PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #5 Deer Valley Road/Kaiser

Cycle (sec): 100 Critical Vol./Cap.(X): 0.483
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 44 Level Of Service: A

Street Name:	Deer Valley Road						Kaiser					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0 2	0 1	1	0 2	0 0	0	0 0	0 0	1	0 0	0 1
Volume Module:												
Base Vol:	0	1077	32	116	1096	0	0	0	0	94	0	283
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1077	32	116	1096	0	0	0	0	94	0	283
Added Vol:	0	18	0	0	13	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1095	32	116	1109	0	0	0	0	94	0	283
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1095	32	116	1109	0	0	0	0	94	0	283
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1095	32	116	1109	0	0	0	0	94	0	283
RTOR Reduct:	0	0	32	0	0	0	0	0	0	0	0	116
RTOR Vol:	0	1095	0	116	1109	0	0	0	0	94	0	167
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1095	0	116	1109	0	0	0	0	94	0	167
Saturation Flow Module:												
Sat/Lane:	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	2.00	1.00	1.00	2.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Final Sat.:	0	3440	1720	1720	3440	0	0	0	0	1720	0	1720
Capacity Analysis Module:												
Vol/Sat:	0.00	0.32	0.00	0.07	0.32	0.00	0.00	0.00	0.00	0.05	0.00	0.10
Crit Volume:		547		116				0				167
Crit Moves:		****		****								****

Antioch Aviano Adult Community TIA
Cumulative PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #6 Deer Valley Road/Sand Creek Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.662
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 67 Level Of Service: B

Street Name:	Deer Valley Road						Sand Creek Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 1	1 0	1	0 1	1 0	1	0 1	1 0	1	0 2	0 1
Volume Module:												
Base Vol:	74	668	47	348	723	119	71	288	52	107	409	370
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	74	668	47	348	723	119	71	288	52	107	409	370
Added Vol:	0	18	36	0	13	0	0	0	0	82	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	74	686	83	348	736	119	71	288	52	189	409	370
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	74	686	83	348	736	119	71	288	52	189	409	370
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	74	686	83	348	736	119	71	288	52	189	409	370
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	348
RTOR Vol:	74	686	83	348	736	119	71	288	52	189	409	22
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	74	686	83	348	736	119	71	288	52	189	409	22
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.78	0.22	1.00	1.72	0.28	1.00	1.69	0.31	1.00	2.00	1.00
Final Sat.:	1650	2944	356	1650	2841	459	1650	2795	505	1650	3300	1650
Capacity Analysis Module:												
Vol/Sat:	0.04	0.23	0.23	0.21	0.26	0.26	0.04	0.10	0.10	0.11	0.12	0.01
Crit Volume:			385	348					170	189		
Crit Moves:			****	****					****	****		

Antioch Aviano Adult Community TIA
Cumulative PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #7 Kaiser/Sand Creek Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.430
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 40 Level Of Service: A

Street Name:	Kaiser						Sand Creek Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2	0 0	1 1	1	0 0	1 0	1	0 2	1 0	2	0 2	1 0
Volume Module:												
Base Vol:	377	26	411	69	62	54	17	432	234	277	455	24
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	377	26	411	69	62	54	17	432	234	277	455	24
Added Vol:	0	0	0	0	0	0	0	36	0	0	82	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	377	26	411	69	62	54	17	468	234	277	537	24
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	377	26	411	69	62	54	17	468	234	277	537	24
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	377	26	411	69	62	54	17	468	234	277	537	24
RTOR Reduct:	0	0	152	0	0	0	0	0	0	0	0	0
RTOR Vol:	377	26	259	69	62	54	17	468	234	277	537	24
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	377	26	259	69	62	54	17	468	234	277	537	24
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	0.91	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00
Lanes:	2.00	0.18	1.82	1.00	0.53	0.47	1.00	2.00	1.00	2.00	2.87	0.13
Final Sat.:	3000	301	2726	1650	882	768	1650	3300	1650	3000	4738	212
Capacity Analysis Module:												
Vol/Sat:	0.13	0.09	0.09	0.04	0.07	0.07	0.01	0.14	0.14	0.09	0.11	0.11
Crit Volume:	189				116			234		139		
Crit Moves:	****				****			****		****		

Antioch Aviano Adult Community TIA
Cumulative PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #8 PARK/Sand Creek Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.479
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 44 Level Of Service: A

Street Name:	PARK						Sand Creek Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	0 1	0	1	0 0 1	0	1	0 2 1	0	1	0 2 1 0
Volume Module:												
Base Vol:	88	13	197	20	15	66	66	762	108	259	611	23
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	88	13	197	20	15	66	66	762	108	259	611	23
Added Vol:	0	0	0	0	0	0	0	36	0	0	82	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	88	13	197	20	15	66	66	798	108	259	693	23
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	88	13	197	20	15	66	66	798	108	259	693	23
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	88	13	197	20	15	66	66	798	108	259	693	23
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Vol:	88	13	197	20	15	66	66	798	108	259	693	23
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	88	13	197	20	15	66	66	798	108	259	693	23
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.06	0.94	1.00	0.19	0.81	1.00	2.64	0.36	1.00	2.90	0.10
Final Sat.:	1650	102	1548	1650	306	1344	1650	4360	590	1650	4791	159
Capacity Analysis Module:												
Vol/Sat:	0.05	0.13	0.13	0.01	0.05	0.05	0.04	0.18	0.18	0.16	0.14	0.14
Crit Volume:			210	20				302		259		
Crit Moves:			****	****				****		****		

Antioch Aviano Adult Community TIA
Cumulative PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #9 Edgewood South Access/Sand Creek Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.188
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 29 Level Of Service: A

Street Name:	Edgewood South Access						Sand Creek Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0	0 0 0	1	0	0 0 1	1	0	3 0 0	0	0	2 1 0
Volume Module:												
Base Vol:	0	0	0	0	0	0	0	980	0	0	896	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	980	0	0	896	0
Added Vol:	0	0	0	0	0	0	0	36	0	0	82	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	0	0	0	0	1016	0	0	978	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	0	0	0	0	1016	0	0	978	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	0	0	0	0	1016	0	0	978	0
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Vol:	0	0	0	0	0	0	0	1016	0	0	978	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	0	0	0	0	1016	0	0	978	0
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	3.00	0.00	0.00	3.00	0.00
Final Sat.:	0	0	0	1800	0	1800	1800	5400	0	0	5400	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.19	0.00	0.00	0.18	0.00
Crit Volume:	0				0			339			326	
Crit Moves:								****				

Antioch Aviano Adult Community TIA
Cumulative PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #10 Hillcrest Avenue/Sand Creek Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.593
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 56 Level Of Service: A

Street Name:	Hillcrest Avenue						Sand Creek Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2	0	1 1 0	1	0	1 1 1	2	0	2 1 0	1	0	2 1 0
Volume Module:												
Base Vol:	242	366	73	29	714	499	453	167	358	131	155	26
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	242	366	73	29	714	499	453	167	358	131	155	26
Added Vol:	0	0	0	0	0	0	0	36	0	0	82	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	242	366	73	29	714	499	453	203	358	131	237	26
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	242	366	73	29	714	499	453	203	358	131	237	26
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	242	366	73	29	714	499	453	203	358	131	237	26
RTOR Reduct:	0	0	0	0	0	249	0	0	0	0	0	0
RTOR Vol:	242	366	73	29	714	250	453	203	358	131	237	26
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	242	366	73	29	714	250	453	203	358	131	237	26
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	0.91	1.00	1.00	1.00	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	1.67	0.33	1.00	2.00	1.00	2.00	2.00	1.00	1.00	2.70	0.30
Final Sat.:	3000	2751	549	1650	3300	1500	3000	3300	1650	1650	4461	489
Capacity Analysis Module:												
Vol/Sat:	0.08	0.13	0.13	0.02	0.22	0.17	0.15	0.06	0.22	0.08	0.05	0.05
Crit Volume:	121				357				358	131		
Crit Moves:	****				****				****	****		

Antioch Aviano Adult Community TIA
Cumulative PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #11 Hillcrest Avenue/East Edgewood Access

Cycle (sec): 100 Critical Vol./Cap.(X): 0.455
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 42 Level Of Service: A

Street Name:	Hillcrest Avenue						East Edgewood Access					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	1 1 0	1	0	1 1 0	1	0	0 1 0	1	0	0 1 0
Volume Module:												
Base Vol:	0	778	72	144	1068	0	0	0	0	171	0	214
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	778	72	144	1068	0	0	0	0	171	0	214
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	778	72	144	1068	0	0	0	0	171	0	214
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	778	72	144	1068	0	0	0	0	171	0	214
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	778	72	144	1068	0	0	0	0	171	0	214
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Vol:	0	778	72	144	1068	0	0	0	0	171	0	214
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	778	72	144	1068	0	0	0	0	171	0	214
Saturation Flow Module:												
Sat/Lane:	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.83	0.17	1.00	2.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00
Final Sat.:	1720	3149	291	1720	3440	0	1720	1720	0	1720	0	1720
Capacity Analysis Module:												
Vol/Sat:	0.00	0.25	0.25	0.08	0.31	0.00	0.00	0.00	0.00	0.10	0.00	0.12
Crit Volume:		425		144			0					214
Crit Moves:		****		****								****

Antioch Aviano Adult Community TIA
Cumulative PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #12 Hillcrest Ave/Prewett Ranch Dr

Cycle (sec): 100 Critical Vol./Cap.(X): 0.587
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 55 Level Of Service: A

Street Name:	Hillcrest Ave						Prewett Dr					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 1	1 0	1	0 1	1 0	1	0 0	1 0	1	0 0	1 0
Volume Module:												
Base Vol:	88	798	101	22	1036	173	120	28	65	114	20	7
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	88	798	101	22	1036	173	120	28	65	114	20	7
Added Vol:	0	36	0	0	139	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	88	834	101	22	1175	173	120	28	65	114	20	7
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	88	834	101	22	1175	173	120	28	65	114	20	7
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	88	834	101	22	1175	173	120	28	65	114	20	7
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Vol:	88	834	101	22	1175	173	120	28	65	114	20	7
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	88	834	101	22	1175	173	120	28	65	114	20	7
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.78	0.22	1.00	1.74	0.26	1.00	0.30	0.70	1.00	0.74	0.26
Final Sat.:	1650	2944	356	1650	2876	424	1650	497	1153	1650	1222	428
Capacity Analysis Module:												
Vol/Sat:	0.05	0.28	0.28	0.01	0.41	0.41	0.07	0.06	0.06	0.07	0.02	0.02
Crit Volume:	88					674		93		114		
Crit Moves:	****					****		****		****		

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Antioch Aviano Adult Community TIA
Cumulative PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #13 Hillcrest Avenue/Vista Grande Drive

Cycle (sec): 100 Critical Vol./Cap.(X): 0.446
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 75 Level Of Service: A

Street Name:	Hillcrest Avenue						Vista Grande Drive					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0 1	1 0	1	0 2	0 0	0	0 0	0 1	1	0 0	0 1
Volume Module:												
Base Vol:	0	921	91	103	1238	0	0	0	0	79	0	50
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	921	91	103	1238	0	0	0	0	79	0	50
Added Vol:	0	36	0	0	139	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	957	91	103	1377	0	0	0	0	79	0	50
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	957	91	103	1377	0	0	0	0	79	0	50
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	957	91	103	1377	0	0	0	0	79	0	50
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	50
RTOR Vol:	0	957	91	103	1377	0	0	0	0	79	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	957	91	103	1377	0	0	0	0	79	0	0
Saturation Flow Module:												
Sat/Lane:	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	1.83	0.17	1.00	2.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Final Sat.:	0	3141	299	1720	3440	0	0	0	0	1720	0	1720
Capacity Analysis Module:												
Vol/Sat:	0.00	0.30	0.30	0.06	0.40	0.00	0.00	0.00	0.00	0.05	0.00	0.00
Crit Volume:		524			689			0		79		
Crit Moves:					****					****		

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Antioch Aviano Adult Community TIA
Cumulative PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #14 Lone Tree Way/Hillcrest Avenue

Cycle (sec): 130 Critical Vol./Cap.(X): 1.186
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 180 Level Of Service: F

Street Name:	Hillcrest Avenue						Lone Tree Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 1	1 0	2	0 2	0 1	1	0 2	1 0	1	0 3	0 1
Volume Module:												
Base Vol:	326	309	247	848	603	117	277	1356	251	381	1170	663
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	326	309	247	848	603	117	277	1356	251	381	1170	663
Added Vol:	0	-54	90	54	-39	-53	0	87	0	178	125	39
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	326	255	337	902	564	64	277	1443	251	559	1295	702
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	326	255	337	902	564	64	277	1443	251	559	1295	702
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	326	255	337	902	564	64	277	1443	251	559	1295	702
RTOR Reduct:	0	0	0	0	0	64	0	0	0	0	0	496
RTOR Vol:	326	255	337	902	564	0	277	1443	251	559	1295	206
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	326	255	337	902	564	0	277	1443	251	559	1295	206
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	1.00	2.00	2.00	1.00	1.00	2.56	0.44	1.00	3.00	1.00
Final Sat.:	1650	1650	1650	3000	3300	1650	1650	4217	733	1650	4950	1650
Capacity Analysis Module:												
Vol/Sat:	0.20	0.15	0.20	0.30	0.17	0.00	0.17	0.34	0.34	0.34	0.26	0.12
Crit Volume:			337	451				565		559		
Crit Moves:			****	****				****		****		

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Antioch Aviano Adult Community TIA
Cumulative PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #15 Lone Tree Way/Vista Grande Drive

Cycle (sec): 130 Critical Vol./Cap.(X): 0.686
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 59 Level Of Service: B

Street Name:	Vista Grande Drive						Lone Tree Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 0	1 0	1	0 0	1 0	1	0 2	1 0	1	0 2	1 0
Volume Module:												
Base Vol:	90	49	141	80	24	115	75	2006	91	127	1912	62
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	90	49	141	80	24	115	75	2006	91	127	1912	62
Added Vol:	0	0	2	2	0	0	0	231	0	3	342	3
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	90	49	143	82	24	115	75	2237	91	130	2254	65
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	90	49	143	82	24	115	75	2237	91	130	2254	65
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	90	49	143	82	24	115	75	2237	91	130	2254	65
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Vol:	90	49	143	82	24	115	75	2237	91	130	2254	65
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	90	49	143	82	24	115	75	2237	91	130	2254	65
Saturation Flow Module:												
Sat/Lane:	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.26	0.74	1.00	0.17	0.83	1.00	2.88	0.12	1.00	2.92	0.08
Final Sat.:	1720	439	1281	1720	297	1423	1720	4958	202	1720	5015	145
Capacity Analysis Module:												
Vol/Sat:	0.05	0.11	0.11	0.05	0.08	0.08	0.04	0.45	0.45	0.08	0.45	0.45
Crit Volume:		192			82				776	130		
Crit Moves:		****			****				****	****		

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Antioch Aviano Adult Community TIA
Cumulative PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #16 Lone Tree Way/Heidorn Ranch Road

Cycle (sec): 120 Critical Vol./Cap.(X): 0.923
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 180 Level Of Service: E

Street Name:	Heidorn Ranch Road						Lone Tree Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2	0 1	0 1	1	0 0 1	0	1	0 2	1 0	1	0 2	1 1
Volume Module:												
Base Vol:	250	21	182	38	19	13	7	2421	126	204	2483	39
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	250	21	182	38	19	13	7	2421	126	204	2483	39
Added Vol:	0	0	61	0	0	0	0	236	0	216	347	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	250	21	243	38	19	13	7	2657	126	420	2830	39
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	250	21	243	38	19	13	7	2657	126	420	2830	39
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	250	21	243	38	19	13	7	2657	126	420	2830	39
RTOR Reduct:	0	0	243	0	0	0	0	0	0	0	0	38
RTOR Vol:	250	21	0	38	19	13	7	2657	126	420	2830	1
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	250	21	0	38	19	13	7	2657	126	420	2830	1
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91
Lanes:	2.00	1.00	1.00	1.00	0.59	0.41	1.00	2.86	0.14	1.00	3.00	1.00
Final Sat.:	3000	1650	1650	1650	980	670	1650	4726	224	1650	4950	1500
Capacity Analysis Module:												
Vol/Sat:	0.08	0.01	0.00	0.02	0.02	0.02	0.00	0.56	0.56	0.25	0.57	0.00
Crit Volume:	125			38					928	420		
Crit Moves:	****			****					****	****		

Antioch Aviano Adult Community TIA
Cumulative PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #17 Lone Tree Way/Canada Valley Road

Cycle (sec): 100 Critical Vol./Cap.(X): 1.191
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 180 Level Of Service: F

Street Name:	Canada Valley Road						Lone Tree Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2	0 0	1 1	1	0 1	0 1	1	0 3	0 1	2	0 3	0 1
Volume Module:												
Base Vol:	189	93	473	593	78	105	189	2445	100	575	2397	425
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	189	93	473	593	78	105	189	2445	100	575	2397	425
Added Vol:	0	0	0	5	0	0	0	297	0	0	564	6
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	189	93	473	598	78	105	189	2742	100	575	2961	431
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	189	93	473	598	78	105	189	2742	100	575	2961	431
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	189	93	473	598	78	105	189	2742	100	575	2961	431
RTOR Reduct:	0	0	316	0	0	105	0	0	100	0	0	431
RTOR Vol:	189	93	157	598	78	0	189	2742	0	575	2961	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	189	93	157	598	78	0	189	2742	0	575	2961	0
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	0.91	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00
Lanes:	2.00	0.74	1.26	1.00	1.00	1.00	1.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3000	1229	1883	1650	1650	1650	1650	4950	1650	3000	4950	1650
Capacity Analysis Module:												
Vol/Sat:	0.06	0.08	0.08	0.36	0.05	0.00	0.11	0.55	0.00	0.19	0.60	0.00
Crit Volume:			125	598				914		288		
Crit Moves:			****	****				****		****		

Antioch Aviano Adult Community TIA
Cumulative PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #18 Lone Tree Way/SB SR-4 Bypass

Cycle (sec): 100 Critical Vol./Cap.(X): 0.934
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 180 Level Of Service: E

Street Name:	SB SR-4 Bypass						Lone Tree Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Protected			Permitted			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0 0	0 0	1	1 0	0 1	0	0 3	0 1	2	0 3	0 0
Volume Module:												
Base Vol:	0	0	0	473	0	261	0	2453	1020	366	3323	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	473	0	261	0	2453	1020	366	3323	0
Added Vol:	0	0	0	-52	0	-39	0	302	0	215	608	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	421	0	222	0	2755	1020	581	3931	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	421	0	222	0	2755	1020	581	3931	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	421	0	222	0	2755	1020	581	3931	0
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Vol:	0	0	0	421	0	222	0	2755	1020	581	3931	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	421	0	222	0	2755	1020	581	3931	0
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	0.00	3.00	1.00	2.00	3.00	0.00
Final Sat.:	0	0	0	3000	0	1650	0	4950	1650	3000	4950	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.14	0.00	0.13	0.00	0.56	0.62	0.19	0.79	0.00
Crit Volume:		0		211				918			1310	
Crit Moves:				****							****	

Antioch Aviano Adult Community TIA
Cumulative PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #19 Lone Tree Way/NB SR-4 Bypass (Jeffrey Way)

Cycle (sec): 100 Critical Vol./Cap.(X): 1.073
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 180 Level Of Service: F

Street Name:	NB SR-4 Bypass (Jeffrey Way)						Lone Tree Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Permitted			Permitted			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	1 0	0 1	0	0 0	0 0	0	0 3	0 1	1	0 3	0 1
Volume Module:												
Base Vol:	1229	0	417	0	0	0	0	2576	350	99	2460	423
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	1229	0	417	0	0	0	0	2576	350	99	2460	423
Added Vol:	0	0	67	0	0	0	0	304	-54	0	824	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	1229	0	484	0	0	0	0	2880	296	99	3284	423
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	1229	0	484	0	0	0	0	2880	296	99	3284	423
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	1229	0	484	0	0	0	0	2880	296	99	3284	423
RTOR Reduct:	0	0	99	0	0	0	0	0	296	0	0	0
RTOR Vol:	1229	0	385	0	0	0	0	2880	0	99	3284	423
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	1229	0	385	0	0	0	0	2880	0	99	3284	423
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	0.00	1.00	0.00	0.00	0.00	0.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	3000	0	1650	0	0	0	0	4950	1650	1650	4950	1650
Capacity Analysis Module:												
Vol/Sat:	0.41	0.00	0.23	0.00	0.00	0.00	0.00	0.58	0.00	0.06	0.66	0.26
Crit Volume:	615				0			960			1095	
Crit Moves:	****										****	

Antioch Aviano Adult Community TIA
Cumulative PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #20 Heidorn Ranch Road/Sand Creek Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.296
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 32 Level Of Service: A

Street Name:	Heidorn Ranch Road						Sand Creek Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	0 1 0	1	0	0 1 0	1	0	1 1 0	1	0	2 0 1
Volume Module:												
Base Vol:	5	11	13	179	12	14	15	264	5	12	297	104
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	5	11	13	179	12	14	15	264	5	12	297	104
Added Vol:	0	97	0	0	186	69	18	18	0	0	13	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	5	108	13	179	198	83	33	282	5	12	310	104
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	5	108	13	179	198	83	33	282	5	12	310	104
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	5	108	13	179	198	83	33	282	5	12	310	104
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	104
RTOR Vol:	5	108	13	179	198	83	33	282	5	12	310	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	5	108	13	179	198	83	33	282	5	12	310	0
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.89	0.11	1.00	0.70	0.30	1.00	1.97	0.03	1.00	2.00	1.00
Final Sat.:	1650	1473	177	1650	1163	487	1650	3243	57	1650	3300	1650
Capacity Analysis Module:												
Vol/Sat:	0.00	0.07	0.07	0.11	0.17	0.17	0.02	0.09	0.09	0.01	0.09	0.00
Crit Volume:		121			179			33			155	
Crit Moves:		****			****			****			****	

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Antioch Aviano Adult Community TIA
Cumulative PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #21 SR-4 Bypass SB Ramps/Sand Creek Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.861
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 134 Level Of Service: D

Street Name:	SR-4 Bypass SB Ramps						Sand Creek Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Ignore		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0	0 0 0	1	0	1 0 1	0	0	2 0 1	0	0	2 0 1
Volume Module:												
Base Vol:	0	0	0	1080	0	195	0	321	80	0	675	152
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	1080	0	195	0	321	80	0	675	152
Added Vol:	0	0	0	64	0	13	0	18	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	1144	0	208	0	339	80	0	675	152
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	1144	0	208	0	339	80	0	675	152
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	1144	0	208	0	339	80	0	675	152
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Vol:	0	0	0	1144	0	208	0	339	80	0	675	152
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	1144	0	208	0	339	80	0	675	152
Saturation Flow Module:												
Sat/Lane:	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.00	0.00	1.00	1.00	1.00	0.00	2.00	1.00	0.00	2.00	1.00
Final Sat.:	0	0	0	1720	1720	1720	0	3440	1720	0	3440	1720
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.67	0.00	0.12	0.00	0.10	0.05	0.00	0.20	0.09
Crit Volume:		0			1144			0			338	
Crit Moves:					****			****			****	

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Antioch Aviano Adult Community TIA
Cumulative PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #22 SR-4 Bypass NB Ramps/Sand Creek Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.584
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 110 Level Of Service: A

Street Name:	SR-4 Bypass NB Ramps						Sand Creek Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Permitted			Protected			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	1 0 1	0	0	0 0 0	2	0	2 0 0	0	0	2 0 1
Volume Module:												
Base Vol:	14	0	308	0	0	0	154	1247	0	0	813	614
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	14	0	308	0	0	0	154	1247	0	0	813	614
Added Vol:	0	0	0	0	0	0	18	64	0	0	0	13
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	14	0	308	0	0	0	172	1311	0	0	813	627
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	14	0	308	0	0	0	172	1311	0	0	813	627
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	14	0	308	0	0	0	172	1311	0	0	813	627
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Vol:	14	0	308	0	0	0	172	1311	0	0	813	627
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	14	0	308	0	0	0	172	1311	0	0	813	627
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	1.00	0.00	0.00	0.00	2.00	2.00	0.00	0.00	2.00	1.00
Final Sat.:	1650	1650	1650	0	0	0	3000	3300	0	0	3300	1650
Capacity Analysis Module:												
Vol/Sat:	0.01	0.00	0.19	0.00	0.00	0.00	0.06	0.40	0.00	0.00	0.25	0.38
Crit Volume:			308			0			656			407
Crit Moves:			****						****			

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Antioch Aviano Adult Community TIA
Cumulative PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #23 Mammoth/Deer Valley

Cycle (sec): 100 Critical Vol./Cap.(X): 0.348
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 35 Level Of Service: A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	2 0 0	0	0	1 1 0	1	0	0 0 1	0	0	0 0 0
Volume Module:												
Base Vol:	60	1134	0	0	943	50	40	0	30	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	60	1134	0	0	943	50	40	0	30	0	0	0
Added Vol:	0	-17	0	0	-14	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	60	1117	0	0	929	50	40	0	30	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	60	1117	0	0	929	50	40	0	30	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	60	1117	0	0	929	50	40	0	30	0	0	0
RTOR Reduct:	0	0	0	0	0	0	0	0	30	0	0	0
RTOR Vol:	60	1117	0	0	929	50	40	0	0	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	60	1117	0	0	929	50	40	0	0	0	0	0
Saturation Flow Module:												
Sat/Lane:	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	0.00	0.00	1.90	0.10	1.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	1720	3440	0	0	3264	176	1720	0	1720	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.03	0.32	0.00	0.00	0.28	0.28	0.02	0.00	0.00	0.00	0.00	0.00
Crit Volume:		559		0			40			0		
Crit Moves:		****			****			****				

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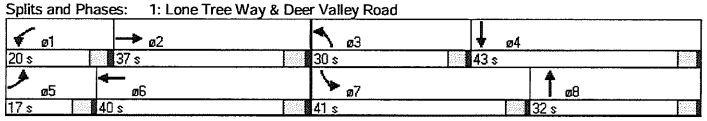
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	4867	0	1770	4948	0	3433	3383	0	*2000	3522	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	4867	0	1770	4948	0	3433	3383	0	1770	3522	0
Satd. Flow (RTOR)		76			38			46			3	
Volume (vph)	60	1190	485	289	1107	247	430	339	142	489	530	20
Lane Group Flow (vph)	71	1971	0	357	1672	0	500	559	0	752	846	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Total Split (s)	17.0	37.0	0.0	20.0	40.0	0.0	30.0	32.0	0.0	41.0	43.0	0.0
Act Effct Green (s)	11.5	36.9		17.0	44.5		25.9	26.1		38.0	38.2	
Actuated g/C Ratio	0.09	0.28		0.13	0.34		0.20	0.20		0.29	0.29	
v/c Ratio	0.45	1.37		1.55	0.97		0.73	0.78		1.29	0.82	
Uniform Delay, d1	57.4	44.1		56.5	42.0		48.9	45.0		46.0	42.3	
Delay	55.8	170.7		224.4	56.2		40.2	58.0		149.7	42.6	
LOS	E	F		F	E		D	E		F	D	
Approach Delay		166.7			85.8			49.6			93.0	
Approach LOS		F			F			D			F	
Queue Length 50th (ft)	58	~808		~408	~567		159	246		~805	346	
Queue Length 95th (ft)	100	#845		m#464	#587		178	294		#614	273	
Internal Link Dist (ft)		900			1588			664			709	
50th Up Block Time (%)										16%		
95th Up Block Time (%)												
Turn Bay Length (ft)	195			195			180			150		
50th Bay Block Time %		62%		86%	13%		3%	30%		61%	40%	
95th Bay Block Time %		64%		88%	18%		4%	26%		55%	32%	
Queuing Penalty (veh)		45		486	55		9	142		246	271	

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 54 (42%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.55
Intersection Signal Delay: 106.4 Intersection LOS: F
Intersection Capacity Utilization 130.8% ICU Level of Service H

* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Lone Tree Way & Deer Valley Road

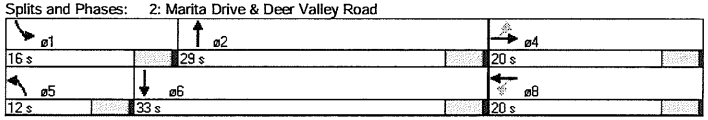


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	1676	0	1770	1598	0	1770	3522	0	1770	3532	0
Flt Permitted	0.745			0.736			0.950			0.950		
Satd. Flow (perm)	1388	1676	0	1371	1598	0	1770	3522	0	1770	3532	0
Satd. Flow (RTOR)		22			18			7			2	
Volume (vph)	18	10	20	12	1	16	65	883	33	195	1019	13
Lane Group Flow (vph)	20	33	0	13	19	0	72	1018	0	217	1146	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Total Split (s)	20.0	20.0	0.0	20.0	20.0	0.0	12.0	29.0	0.0	16.0	33.0	0.0
Act Effct Green (s)	7.5	7.5		7.5	7.5		8.2	40.4		11.9	49.3	
Actuated g/C Ratio	0.12	0.12		0.12	0.12		0.13	0.62		0.18	0.76	
v/c Ratio	0.12	0.16		0.08	0.10		0.32	0.46		0.67	0.43	
Uniform Delay, d1	27.8	9.2		27.6	1.4		28.1	7.3		24.7	4.6	
Delay	25.4	14.8		25.2	13.1		32.9	4.8		31.7	4.1	
LOS	C	B		C	B		C	A		C	A	
Approach Delay		18.8			18.0			6.6			8.5	
Approach LOS		B			B			A			A	
Queue Length 50th (ft)	7	4		5	0		31	38		126	171	
Queue Length 95th (ft)	25	26		18	17		m57	96		m120	m152	
Internal Link Dist (ft)		346			300			2263			664	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	40			100			175			125		
50th Bay Block Time %										5%	9%	
95th Bay Block Time %								4%			7%	
Queuing Penalty (veh)										14	17	

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 16 (25%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.67
Intersection Signal Delay: 8.0 Intersection LOS: A
Intersection Capacity Utilization 53.6% ICU Level of Service A
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Marita Drive & Deer Valley Road

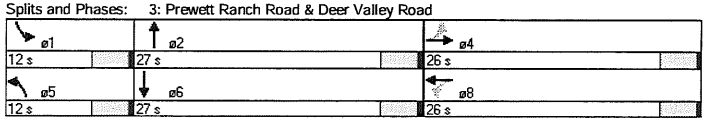


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	1762	0	1770	1742	0	1770	3476	0	1770	3468	0
Flt Permitted	0.229			0.289			0.950			0.950		
Satd. Flow (perm)	427	1762	0	538	1742	0	1770	3476	0	1770	3468	0
Satd. Flow (RTOR)		48			65			26			30	
Volume (vph)	97	246	139	49	246	185	72	638	86	136	816	127
Lane Group Flow (vph)	108	427	0	54	479	0	80	805	0	151	1048	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Total Split (s)	26.0	26.0	0.0	26.0	26.0	0.0	12.0	27.0	0.0	12.0	27.0	0.0
Act Effct Green (s)	20.3	20.3		20.3	20.3		8.3	29.1		8.7	29.3	
Actuated g/C Ratio	0.31	0.31		0.31	0.31		0.13	0.45		0.13	0.45	
v/c Ratio	0.81	0.73		0.32	0.81		0.35	0.51		0.63	0.66	
Uniform Delay, d1	20.6	17.5		17.1	17.6		26.9	12.9		27.9	14.1	
Delay	36.7	17.3		16.7	18.9		35.4	4.6		21.8	18.8	
LOS	D	B		B	B		D	A		C	B	
Approach Delay		21.2			18.6			7.4			19.2	
Approach LOS		C			B			A			B	
Queue Length 50th (ft)	36	123		15	139		32	39		57	250	
Queue Length 95th (ft)	#116	213		43	#253		71	55		75	288	
Internal Link Dist (ft)		416			350			970			2263	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	155			80			140			140		
50th Bay Block Time %					32%						35%	
95th Bay Block Time %		23%			47%						32%	
Queuing Penalty (veh)		12			21						50	

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 16 (25%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.81
Intersection Signal Delay: 16.1 Intersection LOS: B
Intersection Capacity Utilization 80.2% ICU Level of Service D
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Prewett Ranch Road & Deer Valley Road

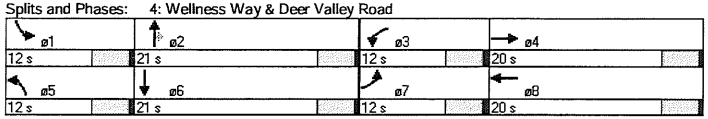


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	1611	0	1770	1608	0	1770	3539	1583	1770	3529	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	1611	0	1770	1608	0	1770	3539	1583	1770	3529	0
Satd. Flow (RTOR)		99			42				73		3	
Volume (vph)	115	10	89	28	4	38	215	599	66	86	925	16
Lane Group Flow (vph)	128	110	0	31	46	0	239	666	73	96	1046	0
Turn Type	Prot			Prot			Prot		Perm	Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			
Total Split (s)	12.0	20.0	0.0	12.0	20.0	0.0	12.0	21.0	21.0	12.0	21.0	0.0
Act Effct Green (s)	8.5	8.7		7.5	7.6		9.0	38.6	38.6	8.4	35.5	
Actuated g/C Ratio	0.13	0.13		0.12	0.12		0.14	0.59	0.59	0.13	0.55	
v/c Ratio	0.55	0.36		0.15	0.20		0.98	0.32	0.08	0.42	0.54	
Uniform Delay, d1	27.5	2.6		29.0	2.5		27.9	9.1	0.0	27.1	11.6	
Delay	26.8	7.8		25.6	10.0		78.9	1.6	0.0	32.0	6.9	
LOS	C	A		C	B		E	A	A	C	A	
Approach Delay		18.0			16.3			20.4			9.0	
Approach LOS		B			B			C			A	
Queue Length 50th (ft)	48	4		11	2		107	6	0	44	30	
Queue Length 95th (ft)	96	42		33	26		#236	18	m0	m64	90	
Internal Link Dist (ft)		172			369			465			955	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	150			185			255		175	230		
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 28 (43%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.98
Intersection Signal Delay: 14.7 Intersection LOS: B
Intersection Capacity Utilization 66.0% ICU Level of Service B
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Wellness Way & Deer Valley Road

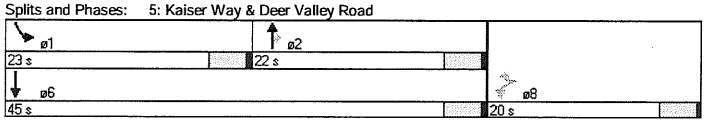


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	0	0	0	1770	0	1583	0	3539	1583	1770	3539	0
Flt Permitted				0.950						0.950		
Satd. Flow (perm)	0	0	0	1770	0	1583	0	3539	1583	1770	3539	0
Satd. Flow (RTOR)						109			138			
Volume (vph)	0	0	0	70	0	98	0	782	124	335	707	0
Lane Group Flow (vph)	0	0	0	78	0	109	0	869	138	372	786	0
Turn Type				custom		custom			Perm	Prot		
Protected Phases								2		1	6	
Permitted Phases				8		8			2			
Total Split (s)	0.0	0.0	0.0	20.0	0.0	20.0	0.0	22.0	22.0	23.0	45.0	0.0
Act Effct Green (s)				9.1		9.1		30.8	30.8	18.0	52.4	
Actuated g/C Ratio				0.14		0.14		0.47	0.47	0.28	0.81	
v/c Ratio				0.32		0.35		0.52	0.17	0.76	0.28	
Uniform Delay, d1				26.1		0.0		12.5	0.0	21.5	1.9	
Delay				24.6		6.1		14.1	3.1	14.6	6.7	
LOS				C		A		B	A	B	A	
Approach Delay					13.8			12.6			9.3	
Approach LOS					B			B			A	
Queue Length 50th (ft)				28		0		134	0	117	73	
Queue Length 95th (ft)				60		36		205	30	#247	222	
Internal Link Dist (ft)		197			305			523			465	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)						90			480	220		
50th Bay Block Time %												
95th Bay Block Time %										21%		
Queuing Penalty (veh)										41		

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 16 (25%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.76
Intersection Signal Delay: 11.0 — Intersection LOS: B
Intersection Capacity Utilization 58.9% — ICU Level of Service A
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: Kaiser Way & Deer Valley Road

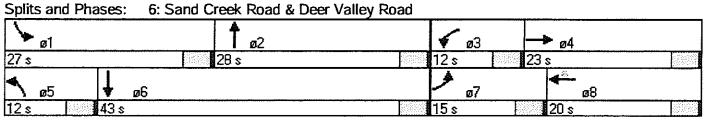


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	3366	0	1770	3539	1583	1770	3408	0	1770	3522	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3366	0	1770	3539	1583	1770	3408	0	1770	3522	0
Satd. Flow (RTOR)		84				121		48			5	
Volume (vph)	189	257	125	49	275	109	77	698	226	311	451	15
Lane Group Flow (vph)	210	425	0	54	306	121	86	1027	0	346	518	0
Turn Type	Prot			Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8						
Total Split (s)	15.0	23.0	0.0	12.0	20.0	20.0	12.0	28.0	0.0	27.0	43.0	0.0
Act Effct Green (s)	12.0	18.9		8.3	13.4	13.4	8.6	31.1		21.5	46.0	
Actuated g/C Ratio	0.13	0.21		0.09	0.15	0.15	0.10	0.35		0.24	0.51	
v/c Ratio	0.89	0.55		0.33	0.58	0.36	0.51	0.85		0.82	0.29	
Uniform Delay, d1	38.4	25.1		39.3	35.0	0.0	39.8	26.5		32.4	13.3	
Delay	64.3	25.9		34.9	34.5	13.9	39.1	41.8		34.2	13.7	
LOS	E	C		C	C	B	D	D		C	B	
Approach Delay		38.6			29.4			41.6			21.9	
Approach LOS		D			C			D			C	
Queue Length 50th (ft)	119	94		31	84	0	47	279		180	87	
Queue Length 95th (ft)	#247	136		68	121	53	94	#453		#299	134	
Internal Link Dist (ft)		412			943			602			523	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	250			150			70			510		
50th Bay Block Time %								51%				
95th Bay Block Time %	6%						28%	64%				
Queuing Penalty (veh)	6						72	49				

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.89
Intersection Signal Delay: 33.6 — Intersection LOS: C
Intersection Capacity Utilization 82.0% — ICU Level of Service D
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 6: Sand Creek Road & Deer Valley Road

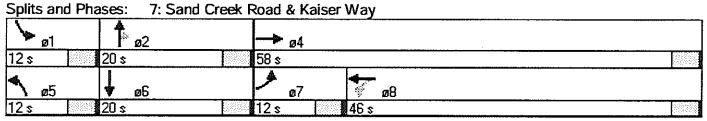


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	4821	0	3433	4892	0	3433	1770	1504	1770	1766	0
Flt Permitted	0.950			0.325			0.950			0.950		
Satd. Flow (perm)	1770	4821	0	1174	4892	0	3433	1770	1504	1770	1766	0
Satd. Flow (RTOR)		272			130				70		19	
Volume (vph)	41	494	259	325	368	123	60	69	63	25	32	17
Lane Group Flow (vph)	46	837	0	361	546	0	67	77	70	28	55	0
Turn Type	Prot			Perm			Prot		Perm	Prot		
Protected Phases	7	4			8		5	2		1	6	
Permitted Phases				8					2			
Total Split (s)	12.0	58.0	0.0	46.0	46.0	0.0	12.0	20.0	20.0	12.0	20.0	0.0
Act Effct Green (s)	8.2	65.6		58.5	58.5		8.0	13.6	13.6	7.6	9.3	
Actuated g/C Ratio	0.09	0.73		0.65	0.65		0.09	0.15	0.15	0.08	0.10	
v/c Ratio	0.29	0.23		0.47	0.17		0.22	0.29	0.24	0.19	0.28	
Uniform Delay, d1	40.4	3.0		10.1	5.8		39.1	33.9	0.0	41.6	23.3	
Delay	47.5	2.5		8.5	1.8		37.9	33.8	9.4	38.0	26.0	
LOS	D	A		A	A		D	C	A	D	C	
Approach Delay		4.9			4.4			27.1			30.0	
Approach LOS		A			A			C			C	
Queue Length 50th (ft)	29	27		81	43		18	37	0	15	19	
Queue Length 95th (ft)	m41	m40		132	1		38	85	38	41	52	
Internal Link Dist (ft)		943			2570			558			722	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	150			130			150		70	150		
50th Bay Block Time %												
95th Bay Block Time %				6%								
Queuing Penalty (veh)				5								

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBTL, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.47
Intersection Signal Delay: 8.0 Intersection LOS: A
Intersection Capacity Utilization 45.9% ICU Level of Service A
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Sand Creek Road & Kaiser Way

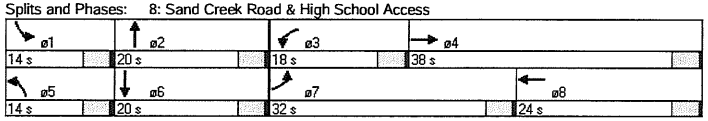


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	5019	0	1770	4882	0	1770	1613	0	1770	1609	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	5019	0	1770	4882	0	1770	1613	0	1770	1609	0
Satd. Flow (RTOR)		20			94			280			207	
Volume (vph)	346	332	31	137	528	190	99	31	252	104	19	186
Lane Group Flow (vph)	384	403	0	152	798	0	110	314	0	116	228	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Total Split (s)	32.0	38.0	0.0	18.0	24.0	0.0	14.0	20.0	0.0	14.0	20.0	0.0
Act Effct Green (s)	24.1	46.9		12.8	35.6		10.0	10.2		10.1	10.3	
Actuated g/C Ratio	0.27	0.52		0.14	0.40		0.11	0.11		0.11	0.11	
v/c Ratio	0.81	0.15		0.60	0.40		0.56	0.73		0.58	0.62	
Uniform Delay, d1	30.8	11.0		36.2	17.5		39.0	3.9		39.1	3.3	
Delay	27.4	16.0		26.6	28.3		37.9	6.8		38.1	7.0	
LOS	C	B		C	C		D	A		D	A	
Approach Delay		21.6			28.1			14.9			17.5	
Approach LOS		C			C			B			B	
Queue Length 50th (ft)	206	50		72	151		60	18		63	11	
Queue Length 95th (ft)	304	93		134	168		112	92		118	72	
Internal Link Dist (ft)		2570			1012			515			1044	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	300			150			150			150		
50th Bay Block Time %												
95th Bay Block Time %	7%			6%	24%							
Queuing Penalty (veh)	5			7	18							

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.81
Intersection Signal Delay: 22.3 Intersection LOS: C
Intersection Capacity Utilization 76.2% ICU Level of Service C

Splits and Phases: 8: Sand Creek Road & High School Access

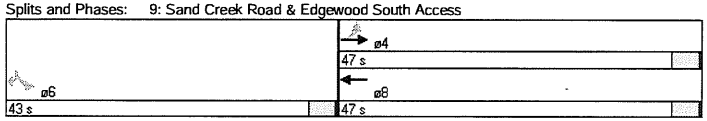


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1863	5085	0	0	5085	0	0	0	0	1863	0	1863
Flt Permitted												
Satd. Flow (perm)	1863	5085	0	0	5085	0	0	0	0	1863	0	1863
Satd. Flow (RTOR)												
Volume (vph)	0	689	0	0	856	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	766	0	0	951	0	0	0	0	0	0	0
Turn Type	Perm									custom		custom
Protected Phases		4			8							
Permitted Phases	4									6		6
Total Split (s)	47.0	47.0	0.0	0.0	47.0	0.0	0.0	0.0	0.0	43.0	0.0	43.0
Act Effct Green (s)		77.5			77.5							
Actuated g/C Ratio		0.86			0.86							
v/c Ratio		0.17			0.22							
Uniform Delay, d1		1.0			1.1							
Delay		0.6			2.1							
LOS		A			A							
Approach Delay		0.6			2.1						0.0	
Approach LOS		A			A						A	
Queue Length 50th (ft)		8			49							
Queue Length 95th (ft)		8			61							
Internal Link Dist (ft)		1012			367			678			1094	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)												
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.22
Intersection Signal Delay: 1.4 Intersection LOS: A
Intersection Capacity Utilization 21.7% ICU Level of Service A

Splits and Phases: 9: Sand Creek Road & Edgewood South Access

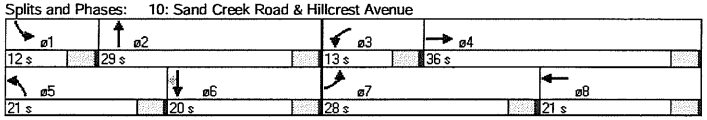


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	3433	4745	0	1770	5060	0	3433	3454	0	1770	3122	1441
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	4745	0	1770	5060	0	3433	3454	0	1770	3122	1441
Satd. Flow (RTOR)		148			6			24			226	244
Volume (vph)	392	163	133	83	143	5	290	688	130	4	183	423
Lane Group Flow (vph)	436	329	0	92	165	0	322	908	0	4	429	244
Turn Type	Prot			Prot			Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												6
Total Split (s)	28.0	36.0	0.0	13.0	21.0	0.0	21.0	29.0	0.0	12.0	20.0	20.0
Act Effct Green (s)	17.0	42.4		9.3	32.6		14.4	29.3		6.8	14.0	14.0
Actuated g/C Ratio	0.19	0.47		0.10	0.36		0.16	0.33		0.08	0.16	0.16
v/c Ratio	0.67	0.14		0.51	0.09		0.59	0.80		0.03	0.63	0.57
Uniform Delay, d1	33.9	8.5		39.3	20.3		35.0	26.8		42.8	15.0	0.0
Delay	34.4	8.7		38.4	21.0		34.7	29.3		36.2	12.5	8.3
LOS	C	A		D	C		C	C		D	B	A
Approach Delay		23.3			27.2			30.7			11.1	
Approach LOS		C			C			C			B	
Queue Length 50th (ft)	140	23		50	21		88	230		2	78	0
Queue Length 95th (ft)	162	0		99	44		124	#349		m9	130	145
Internal Link Dist (ft)		367			1265			116			1953	
50th Up Block Time (%)								34%				
95th Up Block Time (%)							10%	47%				
Turn Bay Length (ft)	300			220			200			150		250
50th Bay Block Time %								11%				
95th Bay Block Time %								31%				
Queuing Penalty (veh)								68				

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 58 (64%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.80
Intersection Signal Delay: 23.9 Intersection LOS: C
Intersection Capacity Utilization 58.2% ICU Level of Service A
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 10: Sand Creek Road & Hillcrest Avenue

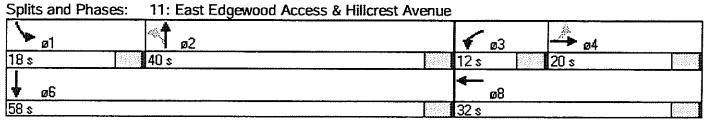


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1863	1863	0	1770	1583	0	1863	3454	0	1770	3539	0
Flt Permitted				0.950						0.950		
Satd. Flow (perm)	1863	1863	0	1770	1583	0	1863	3454	0	1770	3539	0
Satd. Flow (RTOR)					333			29				
Volume (vph)	0	0	0	30	0	108	0	917	171	204	582	0
Lane Group Flow (vph)	0	0	0	33	120	0	0	1209	0	227	647	0
Turn Type	Perm			Prot			Perm			Prot		
Protected Phases		4		3	8			2		1	6	
Permitted Phases	4						2					
Total Split (s)	20.0	20.0	0.0	12.0	32.0	0.0	40.0	40.0	0.0	18.0	58.0	0.0
Act Effct Green (s)				7.9	7.8			60.6		14.5	78.7	
Actuated g/C Ratio				0.09	0.09			0.67		0.16	0.87	
v/c Ratio				0.21	0.27			0.52		0.80	0.21	
Uniform Delay, d1				40.3	0.0			9.7		36.3	1.9	
Delay				38.0	0.0			18.7		38.1	2.1	
LOS				D	A			B		D	A	
Approach Delay		0.0			8.2			18.7			11.4	
Approach LOS		A			A			B			B	
Queue Length 50th (ft)				18	0			390		126	21	
Queue Length 95th (ft)				46	0			456		#240	86	
Internal Link Dist (ft)		296			524			1953			777	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)				150						150		
50th Bay Block Time %								32%				
95th Bay Block Time %								21%		30%		
Queuing Penalty (veh)										48		

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 16 (18%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.80
Intersection Signal Delay: 15.1 Intersection LOS: B
Intersection Capacity Utilization 64.2% ICU Level of Service B
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 11: East Edgewood Access & Hillcrest Avenue

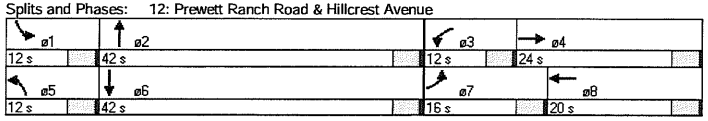


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	1682	0	1770	1833	0	1770	3500	0	1770	3465	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	1682	0	1770	1833	0	1770	3500	0	1770	3465	0
Satd. Flow (RTOR)		94			6			11			25	
Volume (vph)	147	47	85	42	47	5	50	1037	78	14	684	109
Lane Group Flow (vph)	163	146	0	47	58	0	56	1239	0	16	881	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Total Split (s)	16.0	24.0	0.0	12.0	20.0	0.0	12.0	42.0	0.0	12.0	42.0	0.0
Act Effct Green (s)	12.2	12.9		8.1	8.8		8.3	61.5		7.2	54.5	
Actuated g/C Ratio	0.14	0.14		0.09	0.10		0.09	0.68		0.08	0.61	
v/c Ratio	0.68	0.45		0.30	0.31		0.34	0.52		0.11	0.42	
Uniform Delay, d1	37.0	12.2		40.4	35.7		39.3	9.4		42.8	10.3	
Delay	39.0	14.2		38.3	34.0		57.4	3.2		38.1	11.4	
LOS	D	B		D	C		E	A		D	B	
Approach Delay		27.3			35.9			5.5			11.9	
Approach LOS		C			D			A			B	
Queue Length 50th (ft)	89	27		25	28		34	27		9	153	
Queue Length 95th (ft)	#165	79		59	63		m64	230		28	218	
Internal Link Dist (ft)		241			477			777			954	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	100			120			85			115		
50th Bay Block Time %											15%	
95th Bay Block Time %	37%							9%			26%	
Queuing Penalty (veh)	27							2			3	

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 28 (31%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.68
Intersection Signal Delay: 11.5 Intersection LOS: B
Intersection Capacity Utilization 57.0% ICU Level of Service A
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 12: Prewett Ranch Road & Hillcrest Avenue

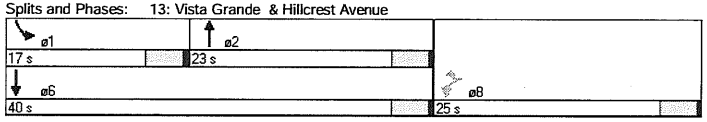


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	0	0	0	1770	0	1583	0	3511	0	1770	3539	0
Flt Permitted				0.950						0.950		
Satd. Flow (perm)	0	0	0	1770	0	1583	0	3511	0	1770	3539	0
Satd. Flow (RTOR)						102		9				
Volume (vph)	0	0	0	77	0	92	0	1202	67	67	767	0
Lane Group Flow (vph)	0	0	0	86	0	102	0	1410	0	74	852	0
Turn Type				custom		custom				Prot		
Protected Phases								2		1	6	
Permitted Phases				8		8						
Total Split (s)	0.0	0.0	0.0	25.0	0.0	25.0	0.0	23.0	0.0	17.0	40.0	0.0
Act Effct Green (s)				9.2		9.2		44.4		8.9	52.3	
Actuated g/C Ratio				0.14		0.14		0.68		0.14	0.80	
v/c Ratio				0.34		0.33		0.59		0.31	0.30	
Uniform Delay, d1				26.2		0.0		7.0		27.5	2.0	
Delay				24.6		6.1		9.2		19.5	4.7	
LOS				C		A		A		B	A	
Approach Delay					14.6			9.2			5.8	
Approach LOS					B			A			A	
Queue Length 50th (ft)				31		0		178		29	118	
Queue Length 95th (ft)				65		35		313		m38	m151	
Internal Link Dist (ft)		216			502			954			614	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)				100						195		
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 16 (25%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.59
Intersection Signal Delay: 8.4 Intersection LOS: A
Intersection Capacity Utilization 58.2% ICU Level of Service A
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 13: Vista Grande & Hillcrest Avenue

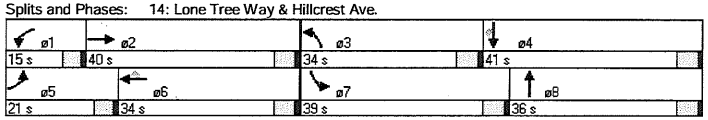


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	4789	0	1770	5085	1583	1770	3155	0	*1900	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	4789	0	1769	5085	1583	1770	3155	0	3431	3539	1583
Satd. Flow (RTOR)		104				485		171				380
Volume (vph)	219	915	493	103	1098	572	89	380	734	810	211	331
Lane Group Flow (vph)	258	1656	0	111	1181	615	120	1506	0	931	243	380
Turn Type	Prot			Prot		Perm	Prot			Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases						6						4
Total Split (s)	21.0	40.0	0.0	15.0	34.0	34.0	34.0	36.0	0.0	39.0	41.0	41.0
Act Effct Green (s)	17.9	37.4		11.6	30.9	30.9	17.0	33.0		36.0	52.0	52.0
Actuated g/C Ratio	0.14	0.29		0.09	0.24	0.24	0.13	0.25		0.28	0.40	0.40
v/c Ratio	1.05	1.14		0.70	0.97	0.82	0.52	1.90dr		1.77	0.17	0.44
Uniform Delay, d1	56.0	43.0		57.5	49.1	9.0	52.7	39.5		47.0	25.1	0.0
Delay	58.5	66.4		68.0	47.2	14.3	44.8	225.4		250.7	26.9	3.2
LOS	E	E		E	D	B	D	F		F	C	A
Approach Delay		65.3			37.8			212.1			155.2	
Approach LOS		E			D			F			F	
Queue Length 50th (ft)	~237	~563		85	355	243	86	~880		~602	66	0
Queue Length 95th (ft)	m166	m296		#170	#455	460	83	#757		#701	114	62
Internal Link Dist (ft)		945			1420			712			1758	
50th Up Block Time (%)								33%				
95th Up Block Time (%)								5%				
Turn Bay Length (ft)	350			210		210	195			855		
50th Bay Block Time %		22%			18%	7%		86%				
95th Bay Block Time %					22%	12%		79%				
Queuing Penalty (veh)		28			22	36		383				

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 78 (60%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.77
Intersection Signal Delay: 111.9 Intersection LOS: F
Intersection Capacity Utilization 126.3% ICU Level of Service H
* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.
dr Defacto Right Lane. Recode with 1 though lane as a right lane.

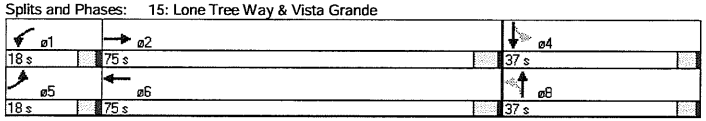
Splits and Phases: 14: Lone Tree Way & Hillcrest Ave.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	5061	0	1770	5070	0	1770	1654	0	1770	1684	0
Flt Permitted	0.950			0.950			0.615			0.517		
Satd. Flow (perm)	1770	5061	0	1769	5070	0	1146	1654	0	963	1684	0
Satd. Flow (RTOR)		5			4			110			66	
Volume (vph)	109	2020	61	51	1719	39	89	38	111	54	29	51
Lane Group Flow (vph)	121	2312	0	55	1890	0	101	169	0	76	113	0
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		
Total Split (s)	18.0	75.0	0.0	18.0	75.0	0.0	37.0	37.0	0.0	37.0	37.0	0.0
Act Effct Green (s)	13.7	94.6		10.9	89.8		17.6	17.6		17.6	17.6	
Actuated g/C Ratio	0.11	0.73		0.08	0.69		0.14	0.14		0.14	0.14	
v/c Ratio	0.65	0.63		0.37	0.54		0.65	0.53		0.58	0.40	
Uniform Delay, d1	55.8	9.3		57.3	9.9		53.3	17.6		52.7	20.8	
Delay	57.4	10.4		47.9	8.7		52.2	18.6		51.5	21.9	
LOS	E	B		D	A		D	B		D	C	
Approach Delay		12.8			9.8			31.2			33.8	
Approach LOS		B			A			C			C	
Queue Length 50th (ft)	95	355		47	137		82	45		61	36	
Queue Length 95th (ft)	m65	m270		m63	226		132	106		83	58	
Internal Link Dist (ft)		1420			1055			786			614	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	200			200			130			100		
50th Bay Block Time %		13%										
95th Bay Block Time %		9%			16%		6%					
Queuing Penalty (veh)		13			4		5					

Intersection Summary
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 55 (42%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.65
Intersection Signal Delay: 13.4 Intersection LOS: B
Intersection Capacity Utilization 75.8% ICU Level of Service C
m Volume for 95th percentile queue is metered by upstream signal.

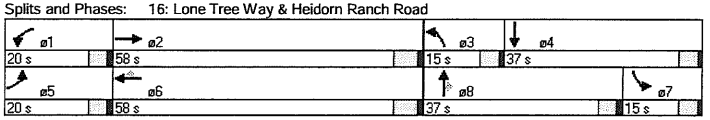
Splits and Phases: 15: Lone Tree Way & Vista Grande



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	5034	0	1770	4806	1362	3433	1863	1583	1770	1820	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	5034	0	1770	4806	1362	3433	1863	1583	1770	1820	0
Satd. Flow (RTOR)		11				7			285		2	
Volume (vph)	8	2550	184	251	1990	25	107	19	357	25	5	1
Lane Group Flow (vph)	8	2790	0	285	2261	28	214	38	714	53	13	0
Turn Type	Prot			Prot		Perm	Prot		Perm	Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases						6			8			
Total Split (s)	20.0	58.0	0.0	20.0	58.0	58.0	15.0	37.0	37.0	15.0	37.0	0.0
Act Effct Green (s)	7.7	58.4		17.0	76.0	76.0	38.2	34.1	34.1	10.8	12.9	
Actuated g/C Ratio	0.06	0.45		0.13	0.58	0.58	0.29	0.26	0.26	0.08	0.10	
v/c Ratio	0.08	1.23		1.23	0.80	0.04	0.21	0.08	1.14	0.36	0.07	
Uniform Delay, d1	62.2	37.4		56.5	27.2	11.0	34.6	36.2	26.1	55.0	48.7	
Delay	77.6	122.8		156.9	9.2	1.0	37.1	34.9	93.5	56.2	41.8	
LOS	E	F		F	A	A	D	C	F	E	D	
Approach Delay		122.6			25.4			78.7			53.4	
Approach LOS		F			C			E			D	
Queue Length 50th (ft)	6	~1102		~289	55	0	57	22	~521	43	9	
Queue Length 95th (ft)	m14	#1186		m#424	#572	m0	69	28	114	44	12	
Internal Link Dist (ft)		1055			905			972			316	
50th Up Block Time (%)												
95th Up Block Time (%)		6%										
Turn Bay Length (ft)	185			400		95	200		200	50		
50th Bay Block Time %		65%							55%			
95th Bay Block Time %		66%		10%	5%							
Queuing Penalty (veh)		92		37	7				70			

Intersection Summary
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 55 (42%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.23
Intersection Signal Delay: 76.2 Intersection LOS: E
Intersection Capacity Utilization 112.0% ICU Level of Service G
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 16: Lone Tree Way & Heidorn Ranch Road



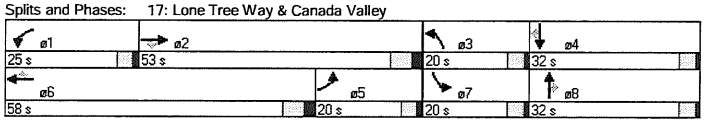
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	5085	1583	3433	5085	1583	3433	1610	1504	1770	1863	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	5085	1583	3433	5085	1583	3433	1610	1504	1770	1863	1583
Satd. Flow (RTOR)			109			293		54	146			172
Volume (vph)	90	2819	106	492	2036	304	41	41	162	499	65	155
Lane Group Flow (vph)	93	2906	109	535	2213	330	59	148	146	554	72	172
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Total Split (s)	20.0	53.0	53.0	25.0	58.0	58.0	20.0	32.0	32.0	20.0	32.0	32.0
Act Effct Green (s)	17.0	66.3	66.3	21.9	71.2	71.2	7.6	12.8	12.8	17.0	23.9	23.9
Actuated g/C Ratio	0.13	0.51	0.51	0.17	0.55	0.55	0.06	0.10	0.10	0.13	0.18	0.18
v/c Ratio	0.40	1.12	0.13	0.93	0.79	0.33	0.29	0.71	0.52	2.40	0.21	0.40
Uniform Delay, d1	51.8	32.2	0.0	53.2	24.2	1.6	59.6	35.2	0.0	56.5	44.9	0.0
Delay	40.5	54.8	3.1	78.6	21.3	4.4	58.3	34.9	8.0	320.7	45.2	6.3
LOS	D	D	A	E	C	A	E	C	A	F	D	A
Approach Delay		52.5			29.4			27.7			228.1	
Approach LOS		D			C			C			F	
Queue Length 50th (ft)	62	~1008	5	246	298	23	25	82	0	~767	53	0
Queue Length 95th (ft)	m50	m#776	m3	m#316	544	m59	36	101	21	#991	95	61
Internal Link Dist (ft)		905			760			542			1064	
50th Up Block Time (%)		5%										
95th Up Block Time (%)												
Turn Bay Length (ft)	320		630	400		350	150			170		170
50th Bay Block Time %		44%								76%		
95th Bay Block Time %		6%			8%					81%		
Queuing Penalty (veh)		100			21					191		

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 37 (28%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 2.40
Intersection Signal Delay: 60.7 Intersection LOS: E
Intersection Capacity Utilization 123.4% ICU Level of Service H

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 17: Lone Tree Way & Canada Valley

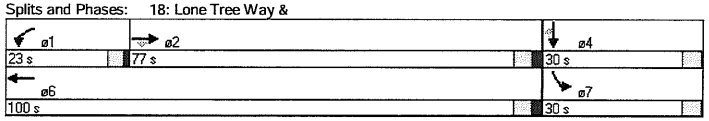


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	0	5085	1583	3433	5085	0	0	0	0	1681	1681	1583
Flt Permitted				0.950						0.950	0.950	
Satd. Flow (perm)	0	5085	1583	3433	5085	0	0	0	0	1681	1681	1583
Satd. Flow (RTOR)			657									3
Volume (vph)	0	2338	886	286	2746	0	0	0	0	342	0	123
Lane Group Flow (vph)	0	2719	1030	329	3156	0	0	0	0	190	190	137
Turn Type			Perm	Prot						Prot		Perm
Protected Phases		2		1	6					7	4	
Permitted Phases			2									4
Total Split (s)	0.0	77.0	77.0	23.0	100.0	0.0	0.0	0.0	0.0	30.0	30.0	30.0
Act Effct Green (s)		76.4	76.4	17.6	97.0					27.0	27.0	27.0
Actuated g/C Ratio		0.59	0.59	0.14	0.75					0.21	0.21	0.21
v/c Ratio		0.91	0.86	0.71	0.83					0.54	0.54	0.41
Uniform Delay, d1		23.7	6.7	53.7	11.0					46.0	46.0	43.6
Delay		11.1	7.7	57.6	8.0					46.7	46.7	44.3
LOS		B	A	E	A					D	D	D
Approach Delay		10.2			12.6						46.1	
Approach LOS		B			B						D	
Queue Length 50th (ft)		172	68	128	589					151	151	99
Queue Length 95th (ft)		m150	m36	m118	m205					235	235	164
Internal Link Dist (ft)		760			760			536			445	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)				310						280		
50th Bay Block Time %					8%							
95th Bay Block Time %					2%							
Queuing Penalty (veh)					12							

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 72 (55%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.91
Intersection Signal Delay: 13.7 Intersection LOS: B
Intersection Capacity Utilization 93.7% ICU Level of Service E
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 18: Lone Tree Way &



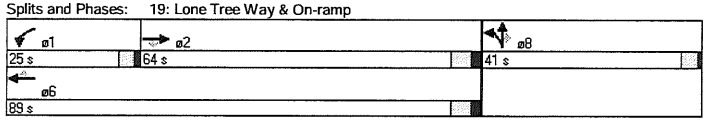
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	0	5085	1583	1770	5085	1583	1681	1681	1583	0	0	0
Flt Permitted				0.950			0.950	0.950				
Satd. Flow (perm)	0	5085	1583	1770	5085	1583	1681	1681	1583	0	0	0
Satd. Flow (RTOR)			194			497			290			
Volume (vph)	0	2375	305	137	2182	441	850	0	718	0	0	0
Lane Group Flow (vph)	0	2794	359	156	2480	501	966	966	1632	0	0	0
Turn Type			Perm	Prot		Perm	Split		Perm			
Protected Phases		2		1	6		8	8				
Permitted Phases			2			6			8			
Total Split (s)	0.0	64.0	64.0	25.0	89.0	89.0	41.0	41.0	41.0	0.0	0.0	0.0
Act Effct Green (s)		66.7	66.7	16.3	86.1	86.1	38.0	38.0	38.0			
Actuated g/C Ratio		0.51	0.51	0.13	0.66	0.66	0.29	0.29	0.29			
v/c Ratio		1.07	0.40	0.70	0.74	0.41	1.97	1.97	2.44			
Uniform Delay, d1		31.7	8.0	54.5	14.5	0.1	46.0	46.0	26.0			
Delay		62.2	2.0	53.8	14.8	0.8	277.3	277.3	321.7			
LOS		E	A	D	B	A	F	F	F			
Approach Delay		55.4			14.5			297.6				
Approach LOS		E			B			F				
Queue Length 50th (ft)		~981	26	128	467	1	~1327	~1327	~2114			
Queue Length 95th (ft)		#1034	m43	189	498	33	#548	#548	#762			
Internal Link Dist (ft)		760			620			935			1156	
50th Up Block Time (%)		14%					30%	30%	63%			
95th Up Block Time (%)		19%										
Turn Bay Length (ft)			240	280		250	1000					
50th Bay Block Time %		20%			15%		25%	25%				
95th Bay Block Time %		27%			16%							
Queuing Penalty (veh)		545			24		119	119				

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 88 (68%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 2.44
Intersection Signal Delay: 130.0 Intersection LOS: F
Intersection Capacity Utilization 161.7% ICU Level of Service H

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 19: Lone Tree Way & On-ramp

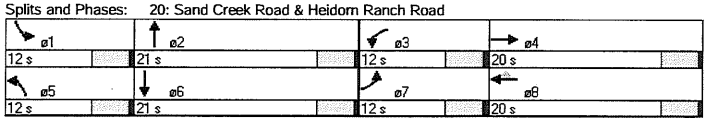


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	3525	0	1770	3539	1583	1770	1850	0	1770	1749	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3525	0	1770	3539	1583	1770	1850	0	1770	1749	0
Satd. Flow (RTOR)		4				190		4			33	
Volume (vph)	88	216	5	11	219	171	5	217	11	50	43	30
Lane Group Flow (vph)	98	246	0	12	243	190	6	253	0	56	81	0
Turn Type	Prot			Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8						
Total Split (s)	12.0	20.0	0.0	12.0	20.0	20.0	12.0	21.0	0.0	12.0	21.0	0.0
Act Effct Green (s)	8.4	18.1		7.0	10.8	10.8	6.7	31.6		8.0	36.6	
Actuated g/C Ratio	0.13	0.28		0.11	0.17	0.17	0.10	0.49		0.12	0.56	
v/c Ratio	0.43	0.25		0.06	0.41	0.45	0.03	0.28		0.26	0.08	
Uniform Delay, d1	27.1	17.8		30.3	22.1	0.0	30.3	12.8		27.9	5.7	
Delay	26.3	17.3		23.1	16.6	6.2	26.2	14.0		26.9	4.1	
LOS	C	B		C	B	A	C	B		C	A	
Approach Delay		19.9			12.3			14.3			13.4	
Approach LOS		B			B			B			B	
Queue Length 50th (ft)	36	34		3	46	0	2	67		35	7	
Queue Length 95th (ft)	77	68		m16	70	66	12	139		m23	m13	
Internal Link Dist (ft)		1331			597			732			1271	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	150			150		150	150			150		
50th Bay Block Time %												
95th Bay Block Time %								4%				
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 16 (25%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.45
Intersection Signal Delay: 15.1 Intersection LOS: B
Intersection Capacity Utilization 40.6% ICU Level of Service A
m Volume for 95th percentile queue is metered by upstream signal.

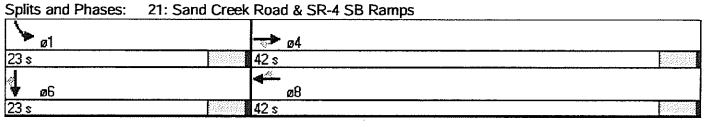
Splits and Phases: 20: Sand Creek Road & Heidorn Ranch Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	0	3539	1583	0	3539	1583	0	0	0	1681	1610	1504
Flt Permitted										0.950	0.950	
Satd. Flow (perm)	0	3539	1583	0	3539	1583	0	0	0	1681	1610	1504
Satd. Flow (RTOR)			283			306						90
Volume (vph)	0	403	255	0	508	275	0	0	0	910	0	81
Lane Group Flow (vph)	0	448	283	0	564	306	0	0	0	506	505	90
Turn Type			Perm			Perm				Prot		Perm
Protected Phases		4			8					1	6	
Permitted Phases			4			8						6
Total Split (s)	0.0	42.0	42.0	0.0	42.0	42.0	0.0	0.0	0.0	23.0	23.0	23.0
Act Effct Green (s)		39.0	39.0		39.0	39.0				20.0	20.0	20.0
Actuated g/C Ratio		0.60	0.60		0.60	0.60				0.31	0.31	0.31
v/c Ratio		0.21	0.27		0.27	0.29				0.98	1.02	0.17
Uniform Delay, d1		5.9	0.0		6.2	0.0				22.3	22.5	0.0
Delay		6.4	1.9		4.3	0.3				50.2	60.1	4.7
LOS		A	A		A	A				D	E	A
Approach Delay		4.7			2.9						51.0	
Approach LOS		A			A						D	
Queue Length 50th (ft)		52	0		31	0				206	~225	0
Queue Length 95th (ft)		27	0		42	0				#396	#423	28
Internal Link Dist (ft)		1483			767			374			330	
50th Up Block Time (%)												
95th Up Block Time (%)										21%	23%	
Turn Bay Length (ft)			100							325		225
50th Bay Block Time %												
95th Bay Block Time %										22%	24%	
Queuing Penalty (veh)										65	60	

Intersection Summary
Cycle Length: 65
Actuated Cycle Length: 65
Offset: 58 (89%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.02
Intersection Signal Delay: 23.0 Intersection LOS: C
Intersection Capacity Utilization 53.1% ICU Level of Service A
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

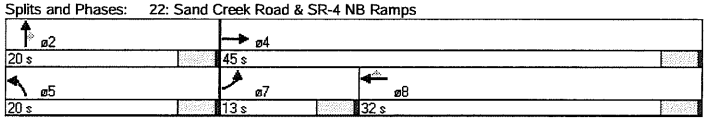
Splits and Phases: 21: Sand Creek Road & SR-4 SB Ramps



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	3433	3539	0	0	3539	1583	1681	1441	1504	0	0	0
Flt Permitted	0.950						0.950					
Satd. Flow (perm)	3433	3539	0	0	3539	1583	1681	1441	1504	0	0	0
Satd. Flow (RTOR)						715		116	116			
Volume (vph)	328	985	0	0	534	723	14	0	293	0	0	0
Lane Group Flow (vph)	364	1094	0	0	593	803	16	163	163	0	0	0
Turn Type	Prot					Perm	Prot		Perm			
Protected Phases	7	4			8		5	2				
Permitted Phases						8			2			
Total Split (s)	13.0	45.0	0.0	0.0	32.0	32.0	20.0	20.0	20.0	0.0	0.0	0.0
Act Effct Green (s)	10.0	49.8			36.8	36.8	9.3	9.3	9.3			
Actuated g/C Ratio	0.15	0.77			0.57	0.57	0.14	0.14	0.14			
v/c Ratio	0.69	0.40			0.30	0.67	0.07	0.53	0.52			
Uniform Delay, d1	26.0	2.6			7.4	0.7	24.1	7.1	7.1			
Delay	37.3	0.6			8.0	1.9	22.0	9.1	9.1			
LOS	D	A			A	A	C	A	A			
Approach Delay		9.8			4.5			9.7				
Approach LOS		A			A			A				
Queue Length 50th (ft)	83	16			56	14	6	18	17			
Queue Length 95th (ft)	m91	m20			102	89	20	67	63			
Internal Link Dist (ft)		767			541			321			323	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	100					350	200		225			
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary
Cycle Length: 65
Actuated Cycle Length: 65
Offset: 49 (75%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.69
Intersection Signal Delay: 7.5 Intersection LOS: A
Intersection Capacity Utilization 73.9% ICU Level of Service C
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 22: Sand Creek Road & SR-4 NB Ramps

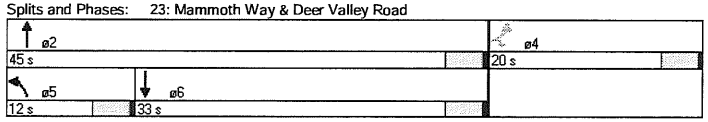


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	0	1583	0	0	0	1770	3539	0	0	3529	0
Flt Permitted	0.950						0.950					
Satd. Flow (perm)	1770	0	1583	0	0	0	1770	3539	0	0	3529	0
Satd. Flow (RTOR)			44								4	
Volume (vph)	85	0	40	0	0	0	20	689	0	0	976	22
Lane Group Flow (vph)	94	0	44	0	0	0	22	766	0	0	1108	0
Turn Type	custom		custom				Prot					
Protected Phases							5	2			6	
Permitted Phases	4		4									
Total Split (s)	20.0	0.0	20.0	0.0	0.0	0.0	12.0	45.0	0.0	0.0	33.0	0.0
Act Effct Green (s)	17.0		17.0				9.0	42.0			30.0	
Actuated g/C Ratio	0.26		0.26				0.14	0.65			0.46	
v/c Ratio	0.20		0.10				0.09	0.33			0.68	
Uniform Delay, d1	18.7		0.0				24.4	5.2			13.7	
Delay	19.2		6.8				15.1	8.0			24.7	
LOS	B		A				B	A			C	
Approach Delay		15.3						8.2			24.7	
Approach LOS		B						A			C	
Queue Length 50th (ft)	29		0				7	120			263	
Queue Length 95th (ft)	63		21				m16	166			295	
Internal Link Dist (ft)		450			395			955			970	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)												
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 65
Offset: 16 (25%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Control Type: Pretimed
Maximum v/c Ratio: 0.68
Intersection Signal Delay: 17.7 Intersection LOS: B
Intersection Capacity Utilization 42.7% ICU Level of Service A
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 23: Mammoth Way & Deer Valley Road

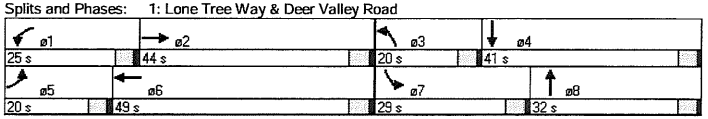


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	4938	0	1770	4933	0	3433	3383	0	*2000	3504	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	4938	0	1770	4933	0	3433	3383	0	1770	3504	0
Satd. Flow (RTOR)		45			52			44			5	
Volume (vph)	124	1304	311	185	1197	301	373	364	150	314	355	24
Lane Group Flow (vph)	146	1900	0	228	1850	0	434	597	0	483	583	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Total Split (s)	20.0	44.0	0.0	25.0	49.0	0.0	20.0	32.0	0.0	29.0	41.0	0.0
Act Effct Green (s)	15.5	45.2		20.5	50.3		17.0	26.3		26.0	35.3	
Actuated g/C Ratio	0.12	0.35		0.16	0.39		0.13	0.20		0.20	0.27	
v/c Ratio	0.70	1.09		0.81	0.95		0.97	0.83		1.21	0.61	
Uniform Delay, d1	54.9	41.3		52.9	37.7		56.2	45.9		52.0	41.0	
Delay	55.0	95.5		33.4	51.9		79.4	44.3		135.4	40.8	
LOS	E	F		C	D		E	D		F	D	
Approach Delay		92.6			49.9			59.1			83.7	
Approach LOS		F			D			E			F	
Queue Length 50th (ft)	118	~688		185	~608		199	228		~495	220	
Queue Length 95th (ft)	180	#724		m179	m557		#281	220		#415	187	
Internal Link Dist (ft)		900			1588			664			709	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	195			195			180			150		
50th Bay Block Time %		52%			42%		13%	9%		59%	24%	
95th Bay Block Time %		55%			42%		26%	33%		53%	15%	
Queuing Penalty (veh)		78			95		58	90		163	93	

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 80 (62%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.21
Intersection Signal Delay: 71.3 Intersection LOS: E
Intersection Capacity Utilization 107.8% ICU Level of Service F
* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Lone Tree Way & Deer Valley Road

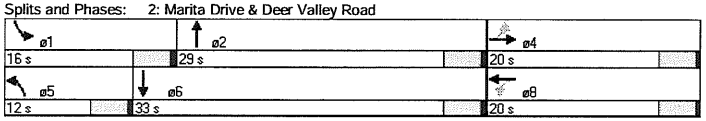


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	1583	0	1770	1591	0	1770	3536	0	1770	3525	0
Flt Permitted	0.619			0.752			0.950			0.950		
Satd. Flow (perm)	1153	1583	0	1401	1591	0	1770	3536	0	1770	3525	0
Satd. Flow (RTOR)		328			140			1			5	
Volume (vph)	15	0	8	42	4	126	15	796	5	32	799	21
Lane Group Flow (vph)	17	9	0	47	144	0	17	890	0	36	911	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Total Split (s)	20.0	20.0	0.0	20.0	20.0	0.0	12.0	29.0	0.0	16.0	33.0	0.0
Act Effct Green (s)	8.6	8.6		8.6	8.6		7.2	48.1		7.8	50.6	
Actuated g/C Ratio	0.13	0.13		0.13	0.13		0.11	0.74		0.12	0.78	
v/c Ratio	0.11	0.02		0.25	0.43		0.09	0.34		0.17	0.33	
Uniform Delay, d1	25.8	0.0		26.3	0.7		30.4	4.4		29.0	3.7	
Delay	23.9	0.0		24.7	5.8		37.4	1.4		26.0	2.3	
LOS	C	A		C	A		D	A		C	A	
Approach Delay		15.6			10.5			2.1			3.2	
Approach LOS		B			B			A			A	
Queue Length 50th (ft)	6	0		17	1		7	3		15	36	
Queue Length 95th (ft)	21	0		43	44		m15	10		m21	m78	
Internal Link Dist (ft)		346			300			2263			664	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	40			100			175			125		
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 16 (25%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.43
Intersection Signal Delay: 3.5 Intersection LOS: A
Intersection Capacity Utilization 40.8% ICU Level of Service A
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Marita Drive & Deer Valley Road

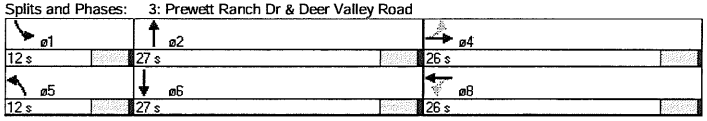


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	1676	0	1770	1788	0	1770	3440	0	1770	3479	0
Flt Permitted	0.638			0.470			0.950			0.950		
Satd. Flow (perm)	1188	1676	0	875	1788	0	1770	3440	0	1770	3479	0
Satd. Flow (RTOR)		170			31			49			23	
Volume (vph)	26	84	166	78	99	36	275	730	169	146	749	93
Lane Group Flow (vph)	29	277	0	87	150	0	306	999	0	162	935	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Total Split (s)	26.0	26.0	0.0	26.0	26.0	0.0	12.0	27.0	0.0	12.0	27.0	0.0
Act Effct Green (s)	12.3	12.3		12.3	12.3		9.0	34.8		8.8	34.7	
Actuated g/C Ratio	0.19	0.19		0.19	0.19		0.14	0.54		0.14	0.53	
v/c Ratio	0.13	0.61		0.52	0.41		1.25	0.54		0.67	0.50	
Uniform Delay, d1	21.9	8.9		23.7	18.2		28.0	9.3		26.6	9.3	
Delay	19.6	9.1		22.4	16.9		126.0	8.2		37.5	10.0	
LOS	B	A		C	B		F	A		D	A	
Approach Delay		10.1			18.9			35.8			14.0	
Approach LOS		B			B			D			B	
Queue Length 50th (ft)	10	37		32	42		~163	82		92	117	
Queue Length 95th (ft)	26	90		64	78		#310	116		125	225	
Internal Link Dist (ft)		416			350			996			2263	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	155			80			140			140		
50th Bay Block Time %							27%				2%	
95th Bay Block Time %					7%		73%				16%	
Queuing Penalty (veh)					3		249				13	

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 16 (25%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.25
Intersection Signal Delay: 23.7 Intersection LOS: C
Intersection Capacity Utilization 77.6% ICU Level of Service C
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Prewett Ranch Dr & Deer Valley Road

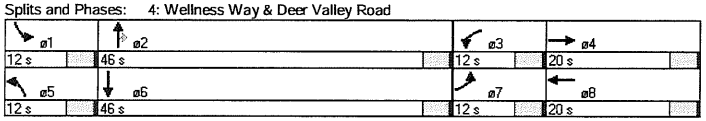


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	1587	0	1770	1606	0	1770	3539	1583	1770	3525	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	1587	0	1770	1606	0	1770	3539	1583	1770	3525	0
Satd. Flow (RTOR)		264			82				32		4	
Volume (vph)	30	3	254	56	6	74	239	1108	31	45	915	26
Lane Group Flow (vph)	33	285	0	62	89	0	266	1231	34	50	1046	0
Turn Type	Prot			Prot			Prot		Perm	Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			
Total Split (s)	12.0	20.0	0.0	12.0	20.0	0.0	12.0	46.0	46.0	12.0	46.0	0.0
Act Effct Green (s)	7.9	9.8		8.3	12.2		9.0	57.6	57.6	8.1	52.8	
Actuated g/C Ratio	0.09	0.11		0.09	0.14		0.10	0.64	0.64	0.09	0.59	
v/c Ratio	0.21	0.70		0.38	0.31		1.50	0.54	0.03	0.31	0.51	
Uniform Delay, d1	40.3	2.6		39.5	2.7		40.5	10.8	0.4	40.5	11.8	
Delay	38.0	6.3		38.5	9.4		208.0	5.4	0.4	38.3	12.5	
LOS	D	A		D	A		F	A	A	D	B	
Approach Delay		9.6			21.4			40.5			13.7	
Approach LOS		A			C			D			B	
Queue Length 50th (ft)	18	11		33	4		~214	141	0	27	172	
Queue Length 95th (ft)	46	81		73	42		#371	277	m0	62	285	
Internal Link Dist (ft)		172			369			465			931	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	150			185			255		175	230		
50th Bay Block Time %												
95th Bay Block Time %							76%	7%			14%	
Queuing Penalty (veh)							233	9			3	

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 28 (31%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.50
Intersection Signal Delay: 26.9 Intersection LOS: C
Intersection Capacity Utilization 78.2% ICU Level of Service C
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Wellness Way & Deer Valley Road

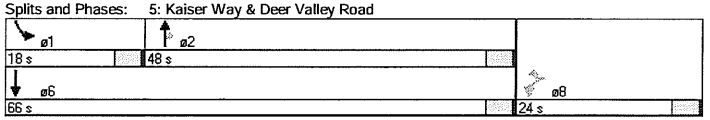


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	0	0	0	1770	0	1583	0	3539	1583	1770	3539	0
Flt Permitted				0.950						0.950		
Satd. Flow (perm)	0	0	0	1770	0	1583	0	3539	1583	1770	3539	0
Satd. Flow (RTOR)						295			36			
Volume (vph)	0	0	0	94	0	283	0	1095	32	116	1109	0
Lane Group Flow (vph)	0	0	0	104	0	314	0	1217	36	129	1232	0
Turn Type				custom		custom			Perm	Prot		
Protected Phases								2		1	6	
Permitted Phases				8		8			2			
Total Split (s)	0.0	0.0	0.0	24.0	0.0	24.0	0.0	48.0	48.0	18.0	66.0	0.0
Act Effct Green (s)				11.9		11.9		56.8	56.8	12.3	72.1	
Actuated g/C Ratio				0.13		0.13		0.63	0.63	0.14	0.80	
v/c Ratio				0.45		0.68		0.54	0.04	0.54	0.43	
Uniform Delay, d1				36.0		2.1		9.3	0.0	36.2	2.7	
Delay				35.0		5.6		15.5	8.9	32.2	3.6	
LOS				C		A		B	A	C	A	
Approach Delay					12.9			15.3			6.4	
Approach LOS					B			B			A	
Queue Length 50th (ft)				56		10		221	0	70	71	
Queue Length 95th (ft)				97		81		309	m6	132	195	
Internal Link Dist (ft)		197			305			523			465	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)						90			480	220		
50th Bay Block Time %												
95th Bay Block Time %				12%		4%						
Queuing Penalty (veh)				18		2						

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 16 (18%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.68
Intersection Signal Delay: 10.9 Intersection LOS: B
Intersection Capacity Utilization 59.8% ICU Level of Service A
m Volume for 95th percentile queue is metered by upstream signal.

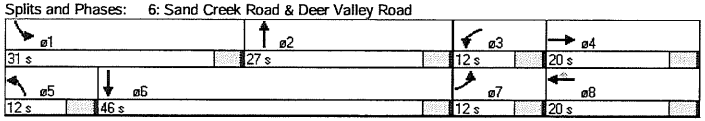
Splits and Phases: 5: Kaiser Way & Deer Valley Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	3458	0	1770	3539	1583	1770	3483	0	1770	3465	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3458	0	1770	3539	1583	1770	3483	0	1770	3465	0
Satd. Flow (RTOR)		20				411		14			27	
Volume (vph)	71	288	52	189	409	370	74	686	83	348	736	119
Lane Group Flow (vph)	79	378	0	210	454	411	82	854	0	387	950	0
Turn Type	Prot			Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8						
Total Split (s)	12.0	20.0	0.0	12.0	20.0	20.0	12.0	27.0	0.0	31.0	46.0	0.0
Act Effct Green (s)	8.5	15.7		9.0	18.1	18.1	8.5	29.2		24.2	46.8	
Actuated g/C Ratio	0.09	0.17		0.10	0.20	0.20	0.09	0.32		0.27	0.52	
v/c Ratio	0.47	0.61		1.19	0.64	0.64	0.49	0.75		0.81	0.52	
Uniform Delay, d1	39.6	31.7		40.5	32.9	0.0	39.7	27.4		30.8	14.9	
Delay	38.9	32.3		135.4	37.5	12.9	39.0	35.1		29.2	17.2	
LOS	D	C		F	D	B	D	D		C	B	
Approach Delay		33.5			47.2			35.4			20.6	
Approach LOS		C			D			D			C	
Queue Length 50th (ft)	43	97		~150	137	0	45	235		232	171	
Queue Length 95th (ft)	88	144		#293	200	193	90	#358		300	203	
Internal Link Dist (ft)		412			943			602			523	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	250			150			70			510		
50th Bay Block Time %				6%				51%				
95th Bay Block Time %				71%	44%		25%	61%				
Queuing Penalty (veh)				88	46		54	46				

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 16 (18%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.19
Intersection Signal Delay: 33.3 Intersection LOS: C
Intersection Capacity Utilization 81.1% ICU Level of Service D
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

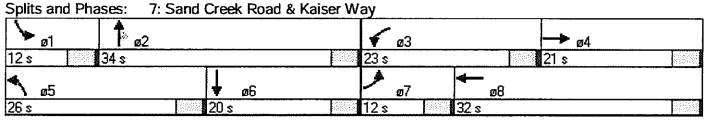
Splits and Phases: 6: Sand Creek Road & Deer Valley Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	4831	0	3433	5055	0	3433	1534	1504	1770	1732	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	4831	0	3433	5055	0	3433	1534	1504	1770	1732	0
Satd. Flow (RTOR)		125			8			228	229		43	
Volume (vph)	17	468	234	277	537	24	377	26	411	69	62	54
Lane Group Flow (vph)	19	780	0	308	624	0	419	257	229	77	129	0
Turn Type	Prot			Prot			Prot		Perm	Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			
Total Split (s)	12.0	21.0	0.0	23.0	32.0	0.0	26.0	34.0	34.0	12.0	20.0	0.0
Act Effct Green (s)	7.5	36.5		14.0	48.8		16.7	21.0	21.0	8.5	10.8	
Actuated g/C Ratio	0.08	0.41		0.16	0.54		0.19	0.23	0.23	0.09	0.12	
v/c Ratio	0.13	0.38		0.58	0.23		0.66	0.48	0.43	0.46	0.52	
Uniform Delay, d1	41.5	16.0		35.2	12.3		34.0	3.1	0.0	39.6	23.9	
Delay	30.0	28.4		34.9	13.0		33.6	5.5	3.7	38.9	24.1	
LOS	C	C		C	B		C	A	A	D	C	
Approach Delay		28.4			20.2			18.0			29.6	
Approach LOS		C			C			B			C	
Queue Length 50th (ft)	10	124		84	54		114	14	0	42	46	
Queue Length 95th (ft)	m16	175		120	122		154	71	52	86	96	
Internal Link Dist (ft)		943			2570			558			722	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	150			130			150		70	150		
50th Bay Block Time %												
95th Bay Block Time %		18%					6%					
Queuing Penalty (veh)		1					15					

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 58 (64%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.66
Intersection Signal Delay: 22.5 Intersection LOS: C
Intersection Capacity Utilization 57.2% ICU Level of Service A
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Sand Creek Road & Kaiser Way

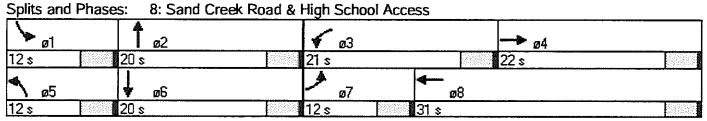


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	4994	0	1770	5060	0	1770	1600	0	1770	1635	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	4994	0	1770	5060	0	1770	1600	0	1770	1635	0
Satd. Flow (RTOR)		31			7			219			73	
Volume (vph)	66	798	108	259	693	23	88	13	197	20	15	66
Lane Group Flow (vph)	73	1007	0	288	796	0	98	233	0	22	90	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Total Split (s)	12.0	22.0	0.0	21.0	31.0	0.0	12.0	20.0	0.0	12.0	20.0	0.0
Act Effct Green (s)	8.3	31.9		15.9	41.4		8.5	13.6		7.4	8.6	
Actuated g/C Ratio	0.11	0.43		0.21	0.55		0.11	0.18		0.10	0.11	
v/c Ratio	0.37	0.47		0.77	0.28		0.49	0.50		0.13	0.36	
Uniform Delay, d1	32.0	16.6		27.8	10.6		32.2	1.5		34.0	5.3	
Delay	31.0	17.1		30.9	9.8		31.5	5.6		30.5	10.6	
LOS	C	B		C	A		C	A		C	B	
Approach Delay		18.0			15.4			13.3			14.5	
Approach LOS		B			B			B			B	
Queue Length 50th (ft)	32	123		123	78		43	5		10	7	
Queue Length 95th (ft)	70	189		209	215		89	62		30	43	
Internal Link Dist (ft)		2570			1012			515			1044	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	300			150			150			150		
50th Bay Block Time %												
95th Bay Block Time %				19%	9%							
Queuing Penalty (veh)				25	13							

Intersection Summary

Cycle Length: 75
Actuated Cycle Length: 75
Offset: 61 (81%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.77
Intersection Signal Delay: 16.2 — Intersection LOS: B
Intersection Capacity Utilization 60.0% — ICU Level of Service B

Splits and Phases: 8: Sand Creek Road & High School Access

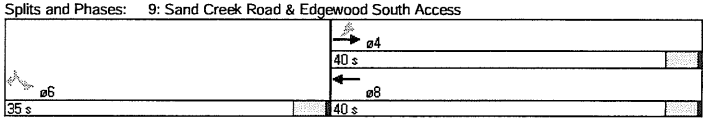


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1863	5085	0	0	5085	0	0	0	0	1863	0	1863
Flt Permitted												
Satd. Flow (perm)	1863	5085	0	0	5085	0	0	0	0	1863	0	1863
Satd. Flow (RTOR)												
Volume (vph)	0	1016	0	0	978	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1129	0	0	1087	0	0	0	0	0	0	0
Turn Type	Perm									custom		custom
Protected Phases		4			8							
Permitted Phases	4									6		6
Total Split (s)	40.0	40.0	0.0	0.0	40.0	0.0	0.0	0.0	0.0	35.0	0.0	35.0
Act Effct Green (s)		62.5			62.5							
Actuated g/C Ratio		0.83			0.83							
v/c Ratio		0.27			0.26							
Uniform Delay, d1		1.3			1.3							
Delay		2.7			0.9							
LOS		A			A							
Approach Delay		2.7			0.9						0.0	
Approach LOS		A			A						A	
Queue Length 50th (ft)		4			10							
Queue Length 95th (ft)		3			50							
Internal Link Dist (ft)		1012			367			678			1094	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)												
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 75
Actuated Cycle Length: 75
Offset: 49 (65%), Referenced to phase 4:EBTL and 8:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.27
Intersection Signal Delay: 1.8 — Intersection LOS: A
Intersection Capacity Utilization 25.1% — ICU Level of Service A

Splits and Phases: 9: Sand Creek Road & Edgewood South Access

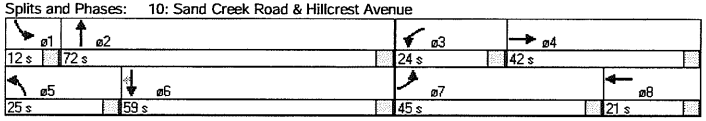


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	3433	4597	0	1770	5009	0	3433	3451	0	1770	3360	1441
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	4597	0	1770	5009	0	3433	3451	0	1770	3360	1441
Satd. Flow (RTOR)		287			10			20			5	502
Volume (vph)	453	203	358	131	237	26	242	366	73	29	714	499
Lane Group Flow (vph)	503	624	0	146	292	0	269	488	0	32	845	502
Turn Type	Prot			Prot			Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												6
Total Split (s)	45.0	42.0	0.0	24.0	21.0	0.0	25.0	72.0	0.0	12.0	59.0	59.0
Act Effct Green (s)	31.5	58.8		17.7	45.0		17.8	55.2		8.3	43.8	43.8
Actuated g/C Ratio	0.21	0.39		0.12	0.30		0.12	0.37		0.06	0.29	0.29
v/c Ratio	0.70	0.32		0.70	0.19		0.66	0.38		0.33	0.86	0.65
Uniform Delay, d1	54.8	16.6		63.5	38.2		63.3	33.2		69.2	49.0	0.0
Delay	50.7	28.3		63.2	41.5		62.9	32.6		72.3	50.0	6.0
LOS	D	C		E	D		E	C		E	D	A
Approach Delay		38.3			48.8			43.4			34.5	
Approach LOS		D			D			D			C	
Queue Length 50th (ft)	158	95		139	81		131	183		31	333	0
Queue Length 95th (ft)	283	193		214	122		176	191		m66	328	75
Internal Link Dist (ft)		367			1265			116			1953	
50th Up Block Time (%)							12%	24%				
95th Up Block Time (%)							30%	22%				
Turn Bay Length (ft)	300			220			200			150		250
50th Bay Block Time %											35%	
95th Bay Block Time %	3%			1%							31%	
Queuing Penalty (veh)	3										10	

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 58 (39%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.86
Intersection Signal Delay: 39.1 Intersection LOS: D
Intersection Capacity Utilization 70.2% ICU Level of Service C
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 10: Sand Creek Road & Hillcrest Avenue

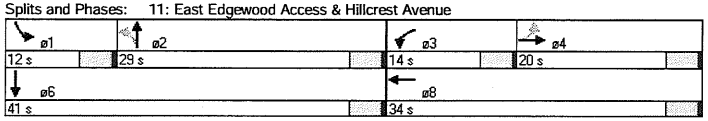


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1863	1863	0	1770	1583	0	1863	3493	0	1770	3539	0
Flt Permitted				0.950						0.950		
Satd. Flow (perm)	1863	1863	0	1770	1583	0	1863	3493	0	1770	3539	0
Satd. Flow (RTOR)					293			14				
Volume (vph)	0	0	0	171	0	214	0	778	72	144	1068	0
Lane Group Flow (vph)	0	0	0	190	238	0	0	944	0	160	1187	0
Turn Type	Perm			Prot			Perm			Prot		
Protected Phases		4		3	8			2		1	6	
Permitted Phases	4						2					
Total Split (s)	20.0	20.0	0.0	14.0	34.0	0.0	29.0	29.0	0.0	12.0	41.0	0.0
Act Effct Green (s)				10.8	10.8			46.2		9.0	58.2	
Actuated g/C Ratio				0.14	0.14			0.62		0.12	0.78	
v/c Ratio				0.75	0.50			0.44		0.75	0.43	
Uniform Delay, d1				30.9	0.0			7.4		31.9	2.8	
Delay				38.8	2.0			10.0		44.1	2.9	
LOS				D	A			A		D	A	
Approach Delay		0.0			18.4			10.0			7.8	
Approach LOS		A			B			A			A	
Queue Length 50th (ft)				86	0			278		73	71	
Queue Length 95th (ft)				#180	34			106		#166	95	
Internal Link Dist (ft)		296			524			1953			777	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)				150						150		
50th Bay Block Time %								14%				
95th Bay Block Time %				24%				4%		17%		
Queuing Penalty (veh)				28						50		

Intersection Summary

Cycle Length: 75
Actuated Cycle Length: 75
Offset: 16 (21%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.75
Intersection Signal Delay: 10.2 Intersection LOS: B
Intersection Capacity Utilization 60.9% ICU Level of Service B
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 11: East Edgewood Access & Hillcrest Avenue

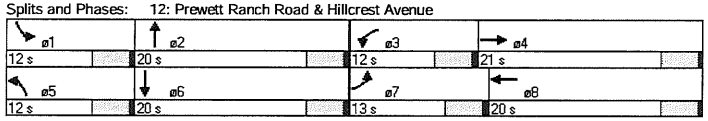


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	1667	0	1770	1788	0	1770	3483	0	1770	3472	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	1667	0	1770	1788	0	1770	3483	0	1770	3472	0
Satd. Flow (RTOR)		72			8			19			24	
Volume (vph)	120	28	65	114	20	7	88	834	101	22	1175	173
Lane Group Flow (vph)	133	103	0	127	30	0	98	1039	0	24	1498	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Total Split (s)	13.0	21.0	0.0	12.0	20.0	0.0	12.0	20.0	0.0	12.0	20.0	0.0
Act Effct Green (s)	13.0	8.2		8.5	7.6		8.4	41.4		7.4	34.2	
Actuated g/C Ratio	0.20	0.13		0.13	0.12		0.13	0.64		0.11	0.53	
v/c Ratio	0.38	0.38		0.55	0.14		0.43	0.47		0.12	0.81	
Uniform Delay, d1	23.5	7.5		27.5	21.1		27.1	10.0		30.3	16.5	
Delay	23.4	11.0		26.8	20.3		26.3	10.9		29.8	45.2	
LOS	C	B		C	C		C	B		C	D	
Approach Delay		18.0			25.5			12.2			44.9	
Approach LOS		B			C			B			D	
Queue Length 50th (ft)	39	11		48	8		36	103		11	~400	
Queue Length 95th (ft)	98	48		96	28		77	258		m21	#520	
Internal Link Dist (ft)		241			477			777			954	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	100			120			85			115		
50th Bay Block Time %								13%			32%	
95th Bay Block Time %	7%						1%	44%			27%	
Queuing Penalty (veh)	4							28			7	

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 28 (43%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.81
Intersection Signal Delay: 29.7 Intersection LOS: C
Intersection Capacity Utilization 71.7% ICU Level of Service C
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 12: Prewett Ranch Road & Hillcrest Avenue

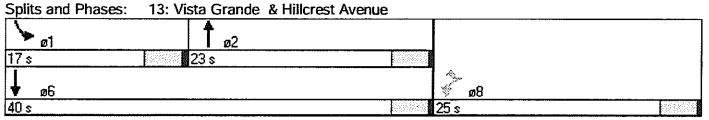


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	0	0	0	1770	0	1583	0	3493	0	1770	3539	0
Flt Permitted				0.950						0.950		
Satd. Flow (perm)	0	0	0	1770	0	1583	0	3493	0	1770	3539	0
Satd. Flow (RTOR)						56		16				
Volume (vph)	0	0	0	79	0	50	0	957	91	103	1377	0
Lane Group Flow (vph)	0	0	0	88	0	56	0	1164	0	114	1530	0
Turn Type				custom		custom				Prot		
Protected Phases								2		1	6	
Permitted Phases				8		8						
Total Split (s)	0.0	0.0	0.0	25.0	0.0	25.0	0.0	23.0	0.0	17.0	40.0	0.0
Act Effct Green (s)				9.3		9.3		41.2		10.0	52.2	
Actuated g/C Ratio				0.14		0.14		0.63		0.15	0.80	
v/c Ratio				0.35		0.20		0.52		0.42	0.54	
Uniform Delay, d1				26.1		0.0		7.7		25.9	2.7	
Delay				24.6		7.7		14.8		22.6	4.3	
LOS				C		A		B		C	A	
Approach Delay					18.0			14.8			5.5	
Approach LOS					B			B			A	
Queue Length 50th (ft)				32		0		185		43	315	
Queue Length 95th (ft)				66		26		331		m40	m245	
Internal Link Dist (ft)		216			502			954			614	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)				100						195		
50th Bay Block Time %											6%	
95th Bay Block Time %											7%	
Queuing Penalty (veh)											7	

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 16 (25%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.54
Intersection Signal Delay: 9.8 Intersection LOS: A
Intersection Capacity Utilization 53.8% ICU Level of Service A
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 13: Vista Grande & Hillcrest Avenue



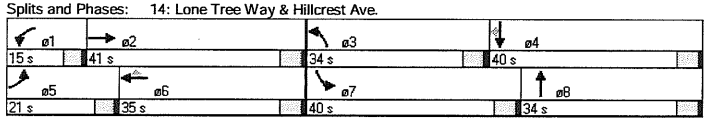
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	4962	0	1770	5085	1583	1770	3209	0	*1900	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	4962	0	1769	5085	1583	1770	3209	0	3428	3539	1583
Satd. Flow (RTOR)		27				511		162				74
Volume (vph)	277	1443	251	559	1295	702	326	255	337	902	564	64
Lane Group Flow (vph)	326	1993	0	601	1392	755	441	800	0	1037	648	74
Turn Type	Prot			Prot		Perm	Prot			Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases						6						4
Total Split (s)	21.0	41.0	0.0	15.0	35.0	35.0	34.0	34.0	0.0	40.0	40.0	40.0
Act Effct Green (s)	17.9	38.8		12.0	32.8	32.8	30.9	30.1		37.1	36.2	36.2
Actuated g/C Ratio	0.14	0.30		0.09	0.25	0.25	0.24	0.23		0.29	0.28	0.28
v/c Ratio	1.33	1.33		3.69	1.08	0.97	1.05	0.92		1.92	0.66	0.15
Uniform Delay, d1	56.0	44.8		59.0	48.6	15.2	49.5	38.6		46.5	41.4	0.0
Delay	124.9	128.3		388.3	102.8	47.2	95.8	44.1		271.3	41.6	7.6
LOS	F	F		F	F	D	F	D		F	D	A
Approach Delay		127.9			150.0			62.5			175.6	
Approach LOS		F			F			E			F	
Queue Length 50th (ft)	~349	~802		~931	~480	311	~382	320		~691	252	0
Queue Length 95th (ft)	m#317	m#689		#1169	#598	#729	#447	305		#789	305	34
Internal Link Dist (ft)		945			1420			712			1758	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	350			210		210	195			855		
50th Bay Block Time %	4%	30%		97%	64%	28%	40%	17%				
95th Bay Block Time %		24%		98%	68%	32%	70%	12%				
Queuing Penalty (veh)	15	88		453	397	138	220	63				

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 50 (38%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 3.69
Intersection Signal Delay: 135.7 Intersection LOS: F
Intersection Capacity Utilization 140.0% ICU Level of Service H

* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 14: Lone Tree Way & Hillcrest Ave.

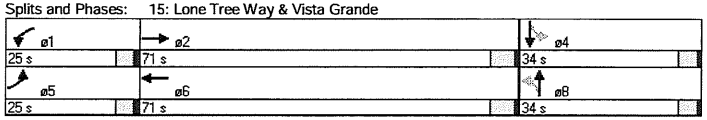


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	5050	0	1770	5065	0	1770	1656	0	1770	1632	0
Flt Permitted	0.950			0.950			0.448			0.408		
Satd. Flow (perm)	1770	5050	0	1769	5065	0	835	1656	0	760	1632	0
Satd. Flow (RTOR)		7			5			105			162	
Volume (vph)	75	2237	91	130	2254	65	90	49	143	82	24	115
Lane Group Flow (vph)	83	2587	0	140	2494	0	102	218	0	115	196	0
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		
Total Split (s)	25.0	71.0	0.0	25.0	71.0	0.0	34.0	34.0	0.0	34.0	34.0	0.0
Act Effct Green (s)	12.9	79.8		16.6	83.5		24.6	24.6		24.6	24.6	
Actuated g/C Ratio	0.10	0.61		0.13	0.64		0.19	0.19		0.19	0.19	
v/c Ratio	0.47	0.83		0.62	0.77		0.65	0.55		0.80	0.45	
Uniform Delay, d1	55.3	19.8		53.7	16.3		48.6	23.9		50.3	7.6	
Delay	60.0	14.4		41.3	22.0		47.5	22.9		51.1	9.8	
LOS	E	B		D	C		D	C		D	A	
Approach Delay		15.8			23.1			30.7			25.1	
Approach LOS		B			C			C			C	
Queue Length 50th (ft)	71	219		114	394		79	83		92	24	
Queue Length 95th (ft)	m52	m218		m108	m491		134	152		119	42	
Internal Link Dist (ft)		1420			1055			786			614	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	200			200			130			100		
50th Bay Block Time %		2%			30%							
95th Bay Block Time %		5%			24%		7%	12%		16%		
Queuing Penalty (veh)		3			38		7	6		15		

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 98 (75%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.83
Intersection Signal Delay: 20.3 Intersection LOS: C
Intersection Capacity Utilization 90.7% ICU Level of Service E
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 15: Lone Tree Way & Vista Grande



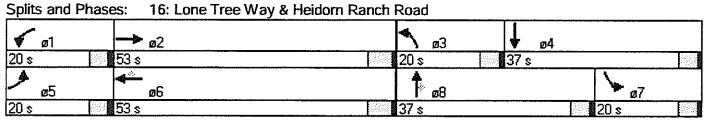
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	5050	0	1770	4806	1362	3433	1863	1583	1770	1747	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	5050	0	1770	4806	1362	3433	1863	1583	1770	1747	0
Satd. Flow (RTOR)		6				8			312		26	
Volume (vph)	7	2657	126	420	2830	39	250	21	243	38	19	13
Lane Group Flow (vph)	7	2840	0	477	3216	44	500	42	486	81	68	0
Turn Type	Prot			Prot		Perm	Prot		Perm	Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases						6			8			
Total Split (s)	20.0	53.0	0.0	20.0	53.0	53.0	20.0	37.0	37.0	20.0	37.0	0.0
Act Effct Green (s)	7.6	65.8		17.0	83.5	83.5	17.0	24.3	24.3	13.4	20.4	
Actuated g/C Ratio	0.06	0.51		0.13	0.64	0.64	0.13	0.19	0.19	0.10	0.16	
v/c Ratio	0.07	1.11		2.06	1.04	0.05	1.11	0.12	0.89	0.45	0.23	
Uniform Delay, d1	62.4	32.5		56.5	25.6	8.4	56.5	44.0	17.8	56.2	29.9	
Delay	79.3	88.7		238.0	47.1	2.9	113.0	41.1	17.8	54.2	27.6	
LOS	E	F		F	D	A	F	D	B	D	C	
Approach Delay		88.7			71.0			65.1			42.0	
Approach LOS		F			E			E			D	
Queue Length 50th (ft)	6	~1021		~651	~339	1	~249	30	157	65	31	
Queue Length 95th (ft)	m7	#1269		m#435	m#911	m1	144	32	18	58	25	
Internal Link Dist (ft)		1055			905			972			316	
50th Up Block Time (%)												
95th Up Block Time (%)		11%										
Turn Bay Length (ft)	185			400		95	200		200	50		
50th Bay Block Time %		37%		81%			23%			24%		
95th Bay Block Time %		73%		10%	17%					16%		
Queuing Penalty (veh)		161		488	40		60			13		

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 114 (88%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 2.06
Intersection Signal Delay: 76.1 Intersection LOS: E
Intersection Capacity Utilization 112.6% ICU Level of Service G

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 16: Lone Tree Way & Heidorn Ranch Road



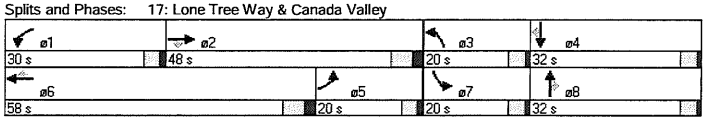
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	5085	1583	3433	5085	1583	3433	1609	1504	1770	1863	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	5085	1583	3433	5085	1583	3433	1609	1504	1770	1863	1583
Satd. Flow (RTOR)			103			286		55	364			117
Volume (vph)	189	2742	100	575	2961	431	189	93	473	598	78	105
Lane Group Flow (vph)	195	2827	103	625	3218	468	274	342	479	664	87	117
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Total Split (s)	20.0	48.0	48.0	30.0	58.0	58.0	20.0	32.0	32.0	20.0	32.0	32.0
Act Effct Green (s)	17.0	48.2	48.2	26.2	57.4	57.4	15.0	26.6	26.6	17.0	28.6	28.6
Actuated g/C Ratio	0.13	0.37	0.37	0.20	0.44	0.44	0.12	0.20	0.20	0.13	0.22	0.22
v/c Ratio	0.84	1.50	0.16	0.90	1.43	0.54	0.69	0.92	0.80	2.87	0.21	0.27
Uniform Delay, d1	55.2	40.9	0.0	50.7	36.3	9.2	55.3	42.3	11.0	56.5	41.4	0.0
Delay	49.6	189.8	7.8	56.0	183.0	10.2	55.2	50.3	12.7	353.1	41.6	7.2
LOS	D	F	A	E	F	B	E	D	B	F	D	A
Approach Delay		175.0			145.8			35.1			275.3	
Approach LOS		F			F			D			F	
Queue Length 50th (ft)	150	~1237	9	265	~1373	107	115	250	93	~960	59	0
Queue Length 95th (ft)	m136	m#1090	m14	#361	#1450	213	120	254	73	#1195	108	50
Internal Link Dist (ft)		905			760			542			1064	
50th Up Block Time (%)		19%			43%							
95th Up Block Time (%)		10%			46%					15%		
Turn Bay Length (ft)	320		630	400		350	150			170		170
50th Bay Block Time %		77%			53%			30%		80%		
95th Bay Block Time %		77%			54%			31%		84%		
Queuing Penalty (veh)		556			1755			83		167		

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 87 (67%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 2.87
Intersection Signal Delay: 154.6 Intersection LOS: F
Intersection Capacity Utilization 144.2% ICU Level of Service H

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 17: Lone Tree Way & Canada Valley

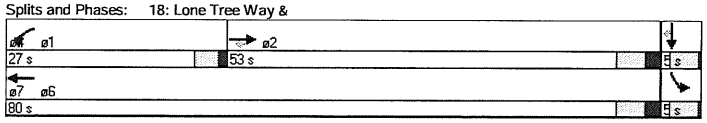


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱	↰	↑↑↑					↰	↑	↱
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	0	5085	1583	3433	5085	0	0	0	0	1681	1681	1583
Flt Permitted				0.950						0.950	0.950	
Satd. Flow (perm)	0	5085	1583	3433	5085	0	0	0	0	1681	1681	1583
Satd. Flow (RTOR)			89									1
Volume (vph)	0	2755	1020	581	3931	0	0	0	0	421	0	222
Lane Group Flow (vph)	0	3203	1186	668	4518	0	0	0	0	234	234	247
Turn Type			Perm	Prot						Prot		Perm
Protected Phases		2		1	6					7	4	
Permitted Phases			2									4
Total Split (s)	0.0	53.0	53.0	27.0	80.0	0.0	0.0	0.0	0.0	5.0	5.0	5.0
Act Effct Green (s)		52.4	52.4	21.6	77.0					2.0	2.0	2.0
Actuated g/C Ratio		0.62	0.62	0.25	0.91					0.02	0.02	0.02
v/c Ratio		1.02	1.17	0.77	0.98					5.85	5.85	6.50
Uniform Delay, d1		16.3	14.8	29.4	3.4					41.5	41.5	40.4
Delay		43.1	99.9	29.2	10.9					432.8	432.8	440.5
LOS		D	F	C	B					F	F	F
Approach Delay		58.5			13.2						435.5	
Approach LOS		E			B						F	
Queue Length 50th (ft)		~691	~765	166	213					~253	~253	~259
Queue Length 95th (ft)		#734	#949	212	232					#401	#401	#404
Internal Link Dist (ft)		760			760			536			445	
50th Up Block Time (%)			8%									
95th Up Block Time (%)			31%		1%							
Turn Bay Length (ft)				310						280		
50th Bay Block Time %					6%							
95th Bay Block Time %					6%					32%	32%	
Queuing Penalty (veh)			229		38					37	37	

Intersection Summary

Cycle Length: 85
Actuated Cycle Length: 85
Offset: 34 (40%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 6.50
Intersection Signal Delay: 61.9 Intersection LOS: E
Intersection Capacity Utilization 115.4% ICU Level of Service G
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 18: Lone Tree Way &

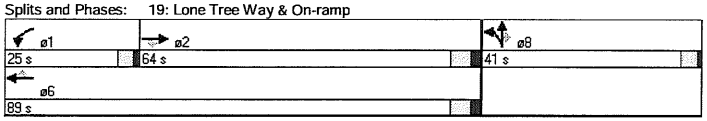


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱	↰	↑↑↑	↱	↰	↑	↱			
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	0	5085	1583	1770	5085	1583	1681	1681	1583	0	0	0
Flt Permitted				0.950			0.950	0.950				
Satd. Flow (perm)	0	5085	1583	1770	5085	1583	1681	1681	1583	0	0	0
Satd. Flow (RTOR)			155			317			290			
Volume (vph)	0	2880	296	99	3284	423	1229	0	484	0	0	0
Lane Group Flow (vph)	0	3388	348	112	3732	481	1397	1396	1100	0	0	0
Turn Type			Perm	Prot		Perm	Split		Perm			
Protected Phases		2		1	6		8	8				
Permitted Phases			2			6			8			
Total Split (s)	0.0	64.0	64.0	25.0	89.0	89.0	41.0	41.0	41.0	0.0	0.0	0.0
Act Effct Green (s)		69.7	69.7	13.3	86.1	86.1	38.0	38.0	38.0			
Actuated g/C Ratio		0.54	0.54	0.10	0.66	0.66	0.29	0.29	0.29			
v/c Ratio		1.24	0.38	0.62	1.11	0.42	2.85	2.84	1.65			
Uniform Delay, d1		30.1	9.0	55.9	22.0	2.9	46.0	46.0	26.0			
Delay		126.6	9.9	55.2	72.7	3.1	351.9	351.8	223.3			
LOS		F	A	E	E	A	F	F	F			
Approach Delay		115.7			64.5			315.5				
Approach LOS		F			E			F				
Queue Length 50th (ft)		~1298	85	92	~1314	48	~2122	~2120	~1168			
Queue Length 95th (ft)		#1309	149	147	#1326	94	#942	#940	292			
Internal Link Dist (ft)		760			620			935			1156	
50th Up Block Time (%)		34%			24%		57%	57%	28%			
95th Up Block Time (%)		38%			25%							
Turn Bay Length (ft)			240	280		250	1000					
50th Bay Block Time %		42%			29%		53%	53%				
95th Bay Block Time %		46%			30%							
Queuing Penalty (veh)		1369			33		373	373				

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 10 (8%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 2.85
Intersection Signal Delay: 162.3 Intersection LOS: F
Intersection Capacity Utilization 159.1% ICU Level of Service H
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 19: Lone Tree Way & On-ramp

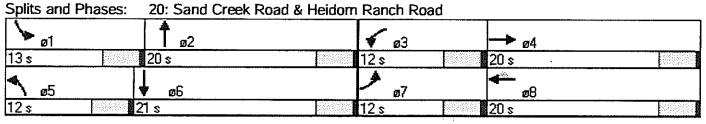


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	3529	0	1770	3539	1583	1770	1833	0	1770	1781	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3529	0	1770	3539	1583	1770	1833	0	1770	1781	0
Satd. Flow (RTOR)		3				116		9			32	
Volume (vph)	33	282	5	12	310	104	5	108	13	179	198	83
Lane Group Flow (vph)	37	319	0	13	344	116	6	134	0	199	312	0
Turn Type	Prot			Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8						
Total Split (s)	12.0	20.0	0.0	12.0	20.0	20.0	12.0	20.0	0.0	13.0	21.0	0.0
Act Effct Green (s)	7.6	14.9		7.1	12.4	12.4	6.7	29.0		9.9	39.8	
Actuated g/C Ratio	0.12	0.23		0.11	0.19	0.19	0.10	0.45		0.15	0.61	
v/c Ratio	0.18	0.39		0.07	0.51	0.29	0.03	0.16		0.74	0.28	
Uniform Delay, d1	29.1	21.0		30.3	22.8	0.0	30.3	11.8		26.3	8.2	
Delay	25.6	20.2		32.7	14.6	2.5	26.2	13.7		24.3	12.2	
LOS	C	C		C	B	A	C	B		C	B	
Approach Delay		20.7			12.1			14.3			16.9	
Approach LOS		C			B			B			B	
Queue Length 50th (ft)	14	59		4	65	9	2	23		142	210	
Queue Length 95th (ft)	37	84		m15	59	1	12	80		m6	m126	
Internal Link Dist (ft)		1301			627			582			1266	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	150			150		150	150			150		
50th Bay Block Time %											10%	
95th Bay Block Time %												
Queuing Penalty (veh)											10	

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 16 (25%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.74
Intersection Signal Delay: 16.1 Intersection LOS: B
Intersection Capacity Utilization 40.0% ICU Level of Service A
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 20: Sand Creek Road & Heidorn Ranch Road

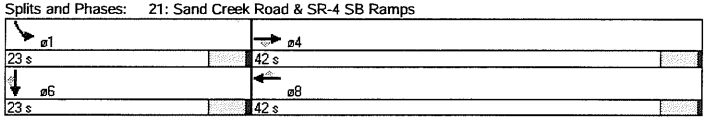


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	0	3539	1583	0	3539	1583	0	0	0	1681	1610	1504
Flt Permitted										0.950	0.950	
Satd. Flow (perm)	0	3539	1583	0	3539	1583	0	0	0	1681	1610	1504
Satd. Flow (RTOR)			89			169						213
Volume (vph)	0	339	80	0	675	152	0	0	0	1144	0	208
Lane Group Flow (vph)	0	377	89	0	750	169	0	0	0	636	635	231
Turn Type			Perm			Perm				Prot		Perm
Protected Phases		4			8					1	6	
Permitted Phases			4			8						6
Total Split (s)	0.0	42.0	42.0	0.0	42.0	42.0	0.0	0.0	0.0	23.0	23.0	23.0
Act Effct Green (s)		39.0	39.0		39.0	39.0				20.0	20.0	20.0
Actuated g/C Ratio		0.60	0.60		0.60	0.60				0.31	0.31	0.31
v/c Ratio		0.18	0.09		0.35	0.17				1.23	1.28	0.38
Uniform Delay, d1		5.8	0.0		6.6	0.0				22.5	22.5	1.2
Delay		1.9	1.2		3.6	0.3				113.3	128.2	3.9
LOS		A	A		A	A				F	F	A
Approach Delay		1.7			3.0						102.8	
Approach LOS		A			A						F	
Queue Length 50th (ft)		1	0		30	0				~336	~360	5
Queue Length 95th (ft)		0	m0		40	4				#528	#560	51
Internal Link Dist (ft)		1483			767			374			330	
50th Up Block Time (%)										6%	9%	
95th Up Block Time (%)										41%	42%	
Turn Bay Length (ft)			100							325		225
50th Bay Block Time %										8%	10%	
95th Bay Block Time %										42%	43%	
Queuing Penalty (veh)										216	170	

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 58 (89%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.28
Intersection Signal Delay: 54.7 Intersection LOS: D
Intersection Capacity Utilization 65.0% ICU Level of Service B
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 21: Sand Creek Road & SR-4 SB Ramps

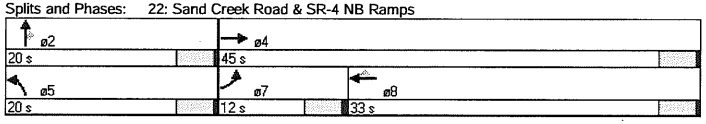


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	3433	3539	0	0	3539	1583	1681	1441	1504	0	0	0
Flt Permitted	0.950						0.950					
Satd. Flow (perm)	3433	3539	0	0	3539	1583	1681	1441	1504	0	0	0
Satd. Flow (RTOR)						697		53	53			
Volume (vph)	172	1311	0	0	813	627	14	0	308	0	0	0
Lane Group Flow (vph)	191	1457	0	0	903	697	16	171	171	0	0	0
Turn Type	Prot					Perm	Prot		Perm			
Protected Phases	7	4			8		5	2				
Permitted Phases						8			2			
Total Split (s)	12.0	45.0	0.0	0.0	33.0	33.0	20.0	20.0	20.0	0.0	0.0	0.0
Act Effct Green (s)	8.7	47.4			35.7	35.7	11.6	11.6	11.6			
Actuated g/C Ratio	0.13	0.73			0.55	0.55	0.18	0.18	0.18			
v/c Ratio	0.42	0.56			0.46	0.59	0.05	0.57	0.55			
Uniform Delay, d1	25.8	4.0			8.9	0.0	22.1	16.5	16.5			
Delay	39.0	1.8			9.9	1.2	19.6	15.9	15.9			
LOS	D	A			A	A	B	B	B			
Approach Delay		6.1			6.1			16.1				
Approach LOS		A			A			B				
Queue Length 50th (ft)	45	41			104	0	5	46	44			
Queue Length 95th (ft)	m40	m29			179	52	18	95	90			
Internal Link Dist (ft)		767			541			321			323	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	100					350	200		225			
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 49 (75%), Referenced to phase 4:EBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.59
Intersection Signal Delay: 7.1 Intersection LOS: A
Intersection Capacity Utilization 62.5% ICU Level of Service B
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 22: Sand Creek Road & SR-4 NB Ramps

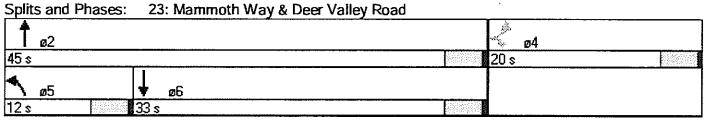


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	0	1583	0	0	0	1770	3539	0	0	3511	0
Flt Permitted	0.950						0.950					
Satd. Flow (perm)	1770	0	1583	0	0	0	1770	3539	0	0	3511	0
Satd. Flow (RTOR)			33								11	
Volume (vph)	40	0	30	0	0	0	60	1117	0	0	929	50
Lane Group Flow (vph)	44	0	33	0	0	0	67	1241	0	0	1088	0
Turn Type	custom		custom				Prot					
Protected Phases							5	2			6	
Permitted Phases	4		4									
Total Split (s)	20.0	0.0	20.0	0.0	0.0	0.0	12.0	45.0	0.0	0.0	33.0	0.0
Act Effct Green (s)	17.0		17.0				9.0	42.0			30.0	
Actuated g/C Ratio	0.26		0.26				0.14	0.65			0.46	
v/c Ratio	0.10		0.08				0.27	0.54			0.67	
Uniform Delay, d1	18.2		0.0				25.1	6.3			13.5	
Delay	18.5		7.5				25.6	6.4			15.6	
LOS	B		A				C	A			B	
Approach Delay		13.8						7.4			15.6	
Approach LOS		B						A			B	
Queue Length 50th (ft)	13		0				24	118			150	
Queue Length 95th (ft)	35		18				57	163			272	
Internal Link Dist (ft)		310			259			931			996	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)												
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 65
Offset: 16 (25%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Control Type: Pretimed
Maximum v/c Ratio: 0.67
Intersection Signal Delay: 11.2 Intersection LOS: B
Intersection Capacity Utilization 47.3% ICU Level of Service A

Splits and Phases: 23: Mammoth Way & Deer Valley Road



CUMULATIVE + PROJECT TRAFFIC CONDITIONS (TRAFFIX & SYNCRHO)

Antioch Aviano Adult Community TIA
Cumulative + Project AM

Impact Analysis Report
Level Of Service

Intersection	Base Del/ Veh	Base V/ C	Future Del/ Veh	Future V/ C	Change in
# 1 Lone Tree Way/Deer Valley Rd	C xxxxx	0.767	C xxxxx	0.782	+ 0.016 V/C
# 2 Deer Valley Road/Marita Drive	A xxxxx	0.410	A xxxxx	0.404	-0.006 V/C
# 3 Deer Valley Road/Prewitt Ranch	B xxxxx	0.651	B xxxxx	0.649	-0.002 V/C
# 4 Deer Valley Road/Wellness Way	A xxxxx	0.509	A xxxxx	0.511	+ 0.002 V/C
# 5 Deer Valley Road/Kaiser	A xxxxx	0.457	A xxxxx	0.463	+ 0.006 V/C
# 6 Deer Valley Road/Sand Creek Ro	B xxxxx	0.632	B xxxxx	0.669	+ 0.038 V/C
# 7 Kaiser/Sand Creek Road	A xxxxx	0.322	A xxxxx	0.322	+ 0.000 V/C
# 8 PARK/Sand Creek Road	A xxxxx	0.586	A xxxxx	0.592	+ 0.006 V/C
# 9 Edgewood South Access/Sand Cre	A xxxxx	0.156	A xxxxx	0.179	+ 0.024 V/C
# 10 Hillcrest Avenue/Sand Creek Ro	A xxxxx	0.408	A xxxxx	0.413	+ 0.005 V/C
# 11 Hillcrest Avenue/East Edgewood	A xxxxx	0.498	A xxxxx	0.544	+ 0.046 V/C
# 12 Hillcrest Ave/Prewett Ranch Dr	A xxxxx	0.423	A xxxxx	0.480	+ 0.056 V/C
# 13 Hillcrest Avenue/Vista Grande	A xxxxx	0.411	A xxxxx	0.465	+ 0.054 V/C
# 14 Lone Tree Way/Hillcrest Avenue	E xxxxx	0.916	F xxxxx	1.095	+ 0.179 V/C
# 15 Lone Tree Way/Vista Grande Dri	A xxxxx	0.504	A xxxxx	0.553	+ 0.048 V/C
# 16 Lone Tree Way/Heidorn Ranch Ro	B xxxxx	0.651	C xxxxx	0.786	+ 0.135 V/C
# 17 Lone Tree Way/Canada Valley Ro	E xxxxx	0.931	F xxxxx	1.062	+ 0.131 V/C
# 18 Lone Tree Way/SB SR-4 Bypass	B xxxxx	0.649	C xxxxx	0.746	+ 0.098 V/C
# 19 Lone Tree Way/NB SR-4 Bypass (	C xxxxx	0.709	E xxxxx	0.916	+ 0.207 V/C
# 20 Heidorn Ranch Road/Sand Creek	A xxxxx	0.124	A xxxxx	0.295	+ 0.172 V/C
# 21 SR-4 Bypass SB Ramps/Sand Cree	B xxxxx	0.672	B xxxxx	0.677	+ 0.006 V/C
# 22 SR-4 Bypass NB Ramps/Sand Cree	A xxxxx	0.473	A xxxxx	0.476	+ 0.003 V/C
# 23 Mammoth/Deer Valley	A xxxxx	0.353	A xxxxx	0.351	-0.002 V/C

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Antioch Aviano Adult Community TIA
Cumulative + Project AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #1 Lone Tree Way/Deer Valley Rd

Cycle (sec): 130 Critical Vol./Cap.(X): 0.782
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 106 Level Of Service: C

Street Name:	Deer Valley Road						Lone Tree Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	15	32	0	15	32	0	15	32	0	15	32	0
Lanes:	2	0 2	0 1	2	0 1	1 0	1	0 2	1 0	1	0 2	1 0
Volume Module:												
Base Vol:	430	339	164	486	530	20	60	1115	485	295	1095	245
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	430	339	164	486	530	20	60	1115	485	295	1095	245
Added Vol:	0	0	-22	6	0	0	0	85	0	-6	29	7
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	430	339	142	492	530	20	60	1200	485	289	1124	252
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	430	339	142	492	530	20	60	1200	485	289	1124	252
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	430	339	142	492	530	20	60	1200	485	289	1124	252
RTOR Reduct:	0	0	142	0	0	0	0	0	0	0	0	0
RTOR Vol:	430	339	0	492	530	20	60	1200	485	289	1124	252
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	430	339	0	492	530	20	60	1200	485	289	1124	252
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	2.00	1.00	2.00	1.93	0.07	1.00	2.14	0.86	1.00	2.45	0.55
Final Sat.:	3000	3300	1650	3000	3180	120	1650	3525	1425	1650	4043	907
Capacity Analysis Module:												
Vol/Sat:	0.14	0.10	0.00	0.16	0.17	0.17	0.04	0.34	0.34	0.18	0.28	0.28
Crit Volume:		170		246				562		289		
Crit Moves:		****		****				****		****		

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Antioch Aviano Adult Community TIA
Cumulative + Project AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #2 Deer Valley Road/Marita Drive

Cycle (sec): 100 Critical Vol./Cap.(X): 0.404
Loss Time (sec): 3 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 17 Level Of Service: A

Street Name:	Deer Valley Road						Marita Drive					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 1	1 0	1	0 1	1 0	1	0 0	1 0	1	0 1	1 0
Volume Module:												
Base Vol:	65	905	33	195	1025	13	18	10	20	12	1	16
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	65	905	33	195	1025	13	18	10	20	12	1	16
Added Vol:	0	-22	0	0	-6	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	65	883	33	195	1019	13	18	10	20	12	1	16
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	65	883	33	195	1019	13	18	10	20	12	1	16
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	65	883	33	195	1019	13	18	10	20	12	1	16
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Vol:	65	883	33	195	1019	13	18	10	20	12	1	16
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	65	883	33	195	1019	13	18	10	20	12	1	16
Saturation Flow Module:												
Sat/Lane:	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.93	0.07	1.00	1.97	0.03	1.00	0.33	0.67	1.00	0.06	0.94
Final Sat.:	1720	3316	124	1720	3397	43	1720	573	1147	1720	101	1619
Capacity Analysis Module:												
Vol/Sat:	0.04	0.27	0.27	0.11	0.30	0.30	0.01	0.02	0.02	0.01	0.01	0.01
Crit Volume:			458	195				30		12		
Crit Moves:			****	****				****		****		

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Antioch Aviano Adult Community TIA
Cumulative + Project AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #3 Deer Valley Road/Prewitt Ranch Drive

Cycle (sec): 100 Critical Vol./Cap.(X): 0.649
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 65 Level Of Service: B

Street Name:	Deer Valley Road						Prewitt Ranch Drive					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 1	1 0	1	0 1	1 0	1	0 0	1 0	1	0 1	1 0
Volume Module:												
Base Vol:	72	660	86	136	822	127	97	246	139	49	246	185
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	72	660	86	136	822	127	97	246	139	49	246	185
Added Vol:	0	-22	0	0	-6	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	72	638	86	136	816	127	97	246	139	49	246	185
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	72	638	86	136	816	127	97	246	139	49	246	185
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	72	638	86	136	816	127	97	246	139	49	246	185
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Vol:	72	638	86	136	816	127	97	246	139	49	246	185
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	72	638	86	136	816	127	97	246	139	49	246	185
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.76	0.24	1.00	1.73	0.27	1.00	0.64	0.36	1.00	0.57	0.43
Final Sat.:	1650	2908	392	1650	2856	444	1650	1054	596	1650	942	708
Capacity Analysis Module:												
Vol/Sat:	0.04	0.22	0.22	0.08	0.29	0.29	0.06	0.23	0.23	0.03	0.26	0.26
Crit Volume:	72					472	97				431	
Crit Moves:	****					****	****				****	

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Antioch Aviano Adult Community TIA
Cumulative + Project AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #4 Deer Valley Road/Wellness Way

Cycle (sec): 100 Critical Vol./Cap.(X): 0.511
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 47 Level Of Service: A

Street Name:	Deer Valley Road						Wellness Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 2	0 1	2	0 1	1 0	1	0 0	1 0	1	0 0	1 0
Volume Module:												
Base Vol:	215	578	66	86	920	16	115	10	89	28	4	38
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	215	578	66	86	920	16	115	10	89	28	4	38
Added Vol:	0	21	0	0	5	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	215	599	66	86	925	16	115	10	89	28	4	38
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	215	599	66	86	925	16	115	10	89	28	4	38
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	215	599	66	86	925	16	115	10	89	28	4	38
RTOR Reduct:	0	0	28	0	0	0	0	0	0	0	0	0
RTOR Vol:	215	599	38	86	925	16	115	10	89	28	4	38
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	215	599	38	86	925	16	115	10	89	28	4	38
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	2.00	1.97	0.03	1.00	0.10	0.90	1.00	0.10	0.90
Final Sat.:	1650	3300	1650	3000	3244	56	1650	167	1483	1650	157	1493
Capacity Analysis Module:												
Vol/Sat:	0.13	0.18	0.02	0.03	0.29	0.29	0.07	0.06	0.06	0.02	0.03	0.03
Crit Volume:	215					471	115					42
Crit Moves:	****					****	****					****

Antioch Aviano Adult Community TIA
Cumulative + Project AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #5 Deer Valley Road/Kaiser

Cycle (sec): 100 Critical Vol./Cap.(X): 0.463
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 42 Level Of Service: A

Street Name:	Deer Valley Road						Kaiser					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0 2	0 1	1	0 2	0 0	0	0 0	0 0	1	0 0	0 1
Volume Module:												
Base Vol:	0	761	124	335	702	0	0	0	0	70	0	98
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	761	124	335	702	0	0	0	0	70	0	98
Added Vol:	0	21	0	0	5	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	782	124	335	707	0	0	0	0	70	0	98
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	782	124	335	707	0	0	0	0	70	0	98
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	782	124	335	707	0	0	0	0	70	0	98
RTOR Reduct:	0	0	70	0	0	0	0	0	0	0	0	98
RTOR Vol:	0	782	54	335	707	0	0	0	0	70	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	782	54	335	707	0	0	0	0	70	0	0
Saturation Flow Module:												
Sat/Lane:	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	2.00	1.00	1.00	2.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Final Sat.:	0	3440	1720	1720	3440	0	0	0	0	1720	0	1720
Capacity Analysis Module:												
Vol/Sat:	0.00	0.23	0.03	0.19	0.21	0.00	0.00	0.00	0.00	0.04	0.00	0.00
Crit Volume:		391		335				0		70		
Crit Moves:		****		****						****		

Antioch Aviano Adult Community TIA
Cumulative + Project AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #6 Deer Valley Road/Sand Creek Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.669
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 69 Level Of Service: B

Street Name:	Deer Valley Road						Sand Creek Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 1	1 0	1	0 1	1 0	1	0 1	1 0	1	0 2	0 1
Volume Module:												
Base Vol:	77	677	132	311	446	15	189	257	125	33	275	109
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	77	677	132	311	446	15	189	257	125	33	275	109
Added Vol:	0	21	99	0	5	0	0	3	0	26	5	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	77	698	231	311	451	15	189	260	125	59	280	109
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	77	698	231	311	451	15	189	260	125	59	280	109
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	77	698	231	311	451	15	189	260	125	59	280	109
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	109
RTOR Vol:	77	698	231	311	451	15	189	260	125	59	280	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	77	698	231	311	451	15	189	260	125	59	280	0
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.50	0.50	1.00	1.94	0.06	1.00	1.35	0.65	1.00	2.00	1.00
Final Sat.:	1650	2479	821	1650	3194	106	1650	2229	1071	1650	3300	1650
Capacity Analysis Module:												
Vol/Sat:	0.05	0.28	0.28	0.19	0.14	0.14	0.11	0.12	0.12	0.04	0.08	0.00
Crit Volume:			465	311			189				140	
Crit Moves:			****	****			****				****	

Antioch Aviano Adult Community TIA
Cumulative + Project AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #7 Kaiser/Sand Creek Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.322
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 34 Level Of Service: A

Street Name:	Kaiser						Sand Creek Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2	0 0	1 1	1	0 0	1 0	1	0 2	1 0	2	0 2	1 0
Volume Module:												
Base Vol:	60	69	63	25	32	17	41	400	259	325	352	123
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	60	69	63	25	32	17	41	400	259	325	352	123
Added Vol:	0	0	0	0	0	0	0	102	0	0	30	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	60	69	63	25	32	17	41	502	259	325	382	123
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	60	69	63	25	32	17	41	502	259	325	382	123
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	60	69	63	25	32	17	41	502	259	325	382	123
RTOR Reduct:	0	0	63	0	0	0	0	0	0	0	0	0
RTOR Vol:	60	69	0	25	32	17	41	502	259	325	382	123
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	60	69	0	25	32	17	41	502	259	325	382	123
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	0.91	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00
Lanes:	2.00	1.00	1.00	1.00	0.65	0.35	1.00	2.00	1.00	2.00	2.27	0.73
Final Sat.:	3000	1650	1500	1650	1078	572	1650	3300	1650	3000	3744	1206
Capacity Analysis Module:												
Vol/Sat:	0.02	0.04	0.00	0.02	0.03	0.03	0.02	0.15	0.16	0.11	0.10	0.10
Crit Volume:		69		25					259	163		
Crit Moves:		****		****					****	****		

Antioch Aviano Adult Community TIA
Cumulative + Project AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #8 PARK/Sand Creek Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.592
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 56 Level Of Service: A

Street Name:	PARK						Sand Creek Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 0	1 0	1	0 0	1 0	1	0 2	1 0	1	0 2	1 0
Volume Module:												
Base Vol:	99	31	252	104	19	186	346	238	31	137	512	190
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	99	31	252	104	19	186	346	238	31	137	512	190
Added Vol:	0	0	0	0	0	0	0	102	0	0	30	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	99	31	252	104	19	186	346	340	31	137	542	190
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	99	31	252	104	19	186	346	340	31	137	542	190
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	99	31	252	104	19	186	346	340	31	137	542	190
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Vol:	99	31	252	104	19	186	346	340	31	137	542	190
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	99	31	252	104	19	186	346	340	31	137	542	190
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.11	0.89	1.00	0.09	0.91	1.00	2.75	0.25	1.00	2.22	0.78
Final Sat.:	1650	181	1469	1650	153	1497	1650	4536	414	1650	3665	1285
Capacity Analysis Module:												
Vol/Sat:	0.06	0.17	0.17	0.06	0.12	0.12	0.21	0.07	0.07	0.08	0.15	0.15
Crit Volume:			283	104			346				244	
Crit Moves:			****	****			****				****	

Antioch Aviano Adult Community TIA
Cumulative + Project AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #9 Edgewood South Access/Sand Creek Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.179
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 23 Level Of Service: A

Street Name:	Edgewood South Access						Sand Creek Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0 0	0	1	0 0	1	1	0 3	0 0	0	0 2	1 0
Volume Module:												
Base Vol:	0	0	0	0	0	0	0	595	0	0	840	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	595	0	0	840	0
Added Vol:	0	0	0	14	0	12	7	95	0	0	18	4
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	14	0	12	7	690	0	0	858	4
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	14	0	12	7	690	0	0	858	4
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	14	0	12	7	690	0	0	858	4
RTOR Reduct:	0	0	0	0	0	7	0	0	0	0	0	0
RTOR Vol:	0	0	0	14	0	5	7	690	0	0	858	4
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	14	0	5	7	690	0	0	858	4
Saturation Flow Module:												
Sat/Lane:	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	3.00	0.00	0.00	2.99	0.01
Final Sat.:	0	0	0	1720	0	1720	1720	5160	0	0	5136	24
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.13	0.00	0.00	0.17	0.17
Crit Volume:		0		14			7				287	
Crit Moves:				****			****				****	

Antioch Aviano Adult Community TIA
Cumulative + Project AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #10 Hillcrest Avenue/Sand Creek Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.413
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 39 Level Of Service: A

Street Name:	Hillcrest Avenue						Sand Creek Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2	0 1	1 0	1	0 1	1 1	2	0 2	1 0	1	0 2	1 0
Volume Module:												
Base Vol:	290	688	130	4	183	423	392	69	133	83	127	5
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	290	688	130	4	183	423	392	69	133	83	127	5
Added Vol:	0	0	0	0	0	2	1	108	0	0	21	4
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	290	688	130	4	183	425	393	177	133	83	148	9
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	290	688	130	4	183	425	393	177	133	83	148	9
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	290	688	130	4	183	425	393	177	133	83	148	9
RTOR Reduct:	0	0	0	0	0	216	0	0	0	0	0	0
RTOR Vol:	290	688	130	4	183	209	393	177	133	83	148	9
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	290	688	130	4	183	209	393	177	133	83	148	9
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	0.91	1.00	1.00	1.00	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	1.68	0.32	1.00	1.40	1.60	2.00	2.00	1.00	1.00	2.83	0.17
Final Sat.:	3000	2776	524	1650	2312	2398	3000	3300	1650	1650	4666	284
Capacity Analysis Module:												
Vol/Sat:	0.10	0.25	0.25	0.00	0.08	0.09	0.13	0.05	0.08	0.05	0.03	0.03
Crit Volume:		409		4			197					52
Crit Moves:		****		****			****					****

Antioch Aviano Adult Community TIA
Cumulative + Project AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #11 Hillcrest Avenue/East Edgewood Access

Cycle (sec): 100 Critical Vol./Cap.(X): 0.544
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 50 Level Of Service: A

Street Name:	Hillcrest Avenue						East Edgewood Access					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 1	1 0	1	0 1	1 0	1	0 0	1 0	1	0 0	1 0
Volume Module:												
Base Vol:	0	917	171	204	582	0	0	0	0	30	0	108
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	917	171	204	582	0	0	0	0	30	0	108
Added Vol:	6	0	0	0	0	25	41	0	2	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	6	917	171	204	582	25	41	0	2	30	0	108
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	6	917	171	204	582	25	41	0	2	30	0	108
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	6	917	171	204	582	25	41	0	2	30	0	108
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Vol:	6	917	171	204	582	25	41	0	2	30	0	108
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	6	917	171	204	582	25	41	0	2	30	0	108
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.69	0.31	1.00	1.92	0.08	1.00	0.00	1.00	1.00	0.00	1.00
Final Sat.:	1650	2781	519	1650	3164	136	1650	0	1650	1650	0	1650
Capacity Analysis Module:												
Vol/Sat:	0.00	0.33	0.33	0.12	0.18	0.18	0.02	0.00	0.00	0.02	0.00	0.07
Crit Volume:		544		204			41					108
Crit Moves:		****		****			****					****

Antioch Aviano Adult Community TIA
Cumulative + Project AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #12 Hillcrest Ave/Prewett Ranch Dr

Cycle (sec): 100 Critical Vol./Cap.(X): 0.480
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 44 Level Of Service: A

Street Name:	Hillcrest Ave						Prewett Dr					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 1	1 0	1	0 1	1 0	1	0 0	1 0	1	0 0	1 0
Volume Module:												
Base Vol:	50	893	78	14	662	109	147	47	85	42	47	5
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	50	893	78	14	662	109	147	47	85	42	47	5
Added Vol:	0	186	0	0	47	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	50	1079	78	14	709	109	147	47	85	42	47	5
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	50	1079	78	14	709	109	147	47	85	42	47	5
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	50	1079	78	14	709	109	147	47	85	42	47	5
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Vol:	50	1079	78	14	709	109	147	47	85	42	47	5
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	50	1079	78	14	709	109	147	47	85	42	47	5
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.87	0.13	1.00	1.73	0.27	1.00	0.36	0.64	1.00	0.90	0.10
Final Sat.:	1650	3078	222	1650	2860	440	1650	588	1063	1650	1491	159
Capacity Analysis Module:												
Vol/Sat:	0.03	0.35	0.35	0.01	0.25	0.25	0.09	0.08	0.08	0.03	0.03	0.03
Crit Volume:			579	14			147				52	
Crit Moves:			****	****			****				****	

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Antioch Aviano Adult Community TIA
Cumulative + Project AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #13 Hillcrest Avenue/Vista Grande Drive

Cycle (sec): 100 Critical Vol./Cap.(X): 0.465
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 35 Level Of Service: A

Street Name:	Hillcrest Avenue						Vista Grande Drive					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0 1	1 0	1	0 2	0 0	0	0 0	0 0	1	0 0	0 1
Volume Module:												
Base Vol:	0	1058	67	67	745	0	0	0	0	77	0	92
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1058	67	67	745	0	0	0	0	77	0	92
Added Vol:	0	186	0	0	47	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1244	67	67	792	0	0	0	0	77	0	92
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1244	67	67	792	0	0	0	0	77	0	92
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1244	67	67	792	0	0	0	0	77	0	92
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	67
RTOR Vol:	0	1244	67	67	792	0	0	0	0	77	0	25
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1244	67	67	792	0	0	0	0	77	0	25
Saturation Flow Module:												
Sat/Lane:	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	1.90	0.10	1.00	2.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Final Sat.:	0	3264	176	1720	3440	0	0	0	0	1720	0	1720
Capacity Analysis Module:												
Vol/Sat:	0.00	0.38	0.38	0.04	0.23	0.00	0.00	0.00	0.00	0.04	0.00	0.01
Crit Volume:		656		67				0		77		
Crit Moves:		****		****						****		

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Antioch Aviano Adult Community TIA
Cumulative + Project AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #14 Lone Tree Way/Hillcrest Avenue

Cycle (sec): 130 Critical Vol./Cap.(X): 1.095
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 180 Level Of Service: F

Street Name:	Hillcrest Avenue						Lone Tree Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 1	1 0	2	0 2	0 1	1	0 2	1 0	1	0 3	0 1
Volume Module:												
Base Vol:	89	444	526	746	227	353	219	773	493	65	1068	556
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	89	444	526	746	227	353	219	773	493	65	1068	556
Added Vol:	22	-55	219	64	-11	-22	0	142	14	44	30	16
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	111	389	745	810	216	331	219	915	507	109	1098	572
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	111	389	745	810	216	331	219	915	507	109	1098	572
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	111	389	745	810	216	331	219	915	507	109	1098	572
RTOR Reduct:	0	0	0	0	0	219	0	0	0	0	0	446
RTOR Vol:	111	389	745	810	216	112	219	915	507	109	1098	127
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	111	389	745	810	216	112	219	915	507	109	1098	127
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	1.00	2.00	2.00	1.00	1.00	2.00	1.00	1.00	3.00	1.00
Final Sat.:	1650	1650	1650	3000	3300	1650	1650	3300	1650	1650	4950	1650
Capacity Analysis Module:												
Vol/Sat:	0.07	0.24	0.45	0.27	0.07	0.07	0.13	0.28	0.31	0.07	0.22	0.08
Crit Volume:			745	405					507	109		
Crit Moves:			****	****					****	****		

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Antioch Aviano Adult Community TIA
Cumulative + Project AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #15 Lone Tree Way/Vista Grande Drive

Cycle (sec): 130 Critical Vol./Cap.(X): 0.553
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 42 Level Of Service: A

Street Name:	Vista Grande Drive						Lone Tree Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 0	1 0	1	0 0	1 0	1	0 2	1 0	1	0 2	1 0
Volume Module:												
Base Vol:	89	38	110	53	29	51	109	1606	61	50	1635	38
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	89	38	110	53	29	51	109	1606	61	50	1635	38
Added Vol:	0	0	1	1	0	0	0	423	0	1	89	1
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	89	38	111	54	29	51	109	2029	61	51	1724	39
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	89	38	111	54	29	51	109	2029	61	51	1724	39
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	89	38	111	54	29	51	109	2029	61	51	1724	39
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Vol:	89	38	111	54	29	51	109	2029	61	51	1724	39
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	89	38	111	54	29	51	109	2029	61	51	1724	39
Saturation Flow Module:												
Sat/Lane:	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.26	0.74	1.00	0.36	0.64	1.00	2.91	0.09	1.00	2.93	0.07
Final Sat.:	1720	439	1281	1720	624	1097	1720	5009	151	1720	5046	114
Capacity Analysis Module:												
Vol/Sat:	0.05	0.09	0.09	0.03	0.05	0.05	0.06	0.41	0.41	0.03	0.34	0.34
Crit Volume:			149	54					697	51		
Crit Moves:			****	****					****	****		

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Antioch Aviano Adult Community TIA
Cumulative + Project AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #16 Lone Tree Way/Heidorn Ranch Road

Cycle (sec): 120 Critical Vol./Cap.(X): 0.786
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 106 Level Of Service: C

Street Name:	Heidorn Ranch Road						Lone Tree Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2	0 1	0 1	1	0 0 1	0	1	0 2	1 0	1	0 2	1 1
Volume Module:												
Base Vol:	107	19	138	25	5	1	8	2134	184	217	1905	25
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	107	19	138	25	5	1	8	2134	184	217	1905	25
Added Vol:	0	0	219	0	0	0	0	425	0	34	90	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	107	19	357	25	5	1	8	2559	184	251	1995	25
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	107	19	357	25	5	1	8	2559	184	251	1995	25
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	107	19	357	25	5	1	8	2559	184	251	1995	25
RTOR Reduct:	0	0	251	0	0	0	0	0	0	0	0	25
RTOR Vol:	107	19	106	25	5	1	8	2559	184	251	1995	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	107	19	106	25	5	1	8	2559	184	251	1995	0
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91
Lanes:	2.00	1.00	1.00	1.00	0.83	0.17	1.00	2.80	0.20	1.00	3.00	1.00
Final Sat.:	3000	1650	1650	1650	1375	275	1650	4618	332	1650	4950	1500
Capacity Analysis Module:												
Vol/Sat:	0.04	0.01	0.06	0.02	0.00	0.00	0.00	0.55	0.55	0.15	0.40	0.00
Crit Volume:			106	25				914		251		
Crit Moves:			****	****				****		****		

Antioch Aviano Adult Community TIA
Cumulative + Project AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #17 Lone Tree Way/Canada Valley Road

Cycle (sec): 100 Critical Vol./Cap.(X): 1.062
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 180 Level Of Service: F

Street Name:	Canada Valley Road						Lone Tree Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2	0 0	1 1	1	0 1	0 1	1	0 3	0 1	2	0 3	0 1
Volume Module:												
Base Vol:	41	41	162	497	65	155	90	2184	106	492	1917	303
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	41	41	162	497	65	155	90	2184	106	492	1917	303
Added Vol:	2	0	0	2	0	0	0	641	3	0	122	1
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	43	41	162	499	65	155	90	2825	109	492	2039	304
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	43	41	162	499	65	155	90	2825	109	492	2039	304
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	43	41	162	499	65	155	90	2825	109	492	2039	304
RTOR Reduct:	0	0	162	0	0	90	0	0	24	0	0	304
RTOR Vol:	43	41	0	499	65	65	90	2825	85	492	2039	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	43	41	0	499	65	65	90	2825	85	492	2039	0
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	0.91	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00
Lanes:	2.00	1.00	1.00	1.00	1.00	1.00	1.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3000	1650	1500	1650	1650	1650	1650	4950	1650	3000	4950	1650
Capacity Analysis Module:												
Vol/Sat:	0.01	0.02	0.00	0.30	0.04	0.04	0.05	0.57	0.05	0.16	0.41	0.00
Crit Volume:		41		499				942		246		
Crit Moves:		****		****				****		****		

Antioch Aviano Adult Community TIA
Cumulative + Project AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #18 Lone Tree Way/SB SR-4 Bypass

Cycle (sec): 100 Critical Vol./Cap.(X): 0.746
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 73 Level Of Service: C

Street Name:	SB SR-4 Bypass						Lone Tree Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Protected			Permitted			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0 0	0 0	1	1 0	0 1	0	0 3	0 1	2	0 3	0 0
Volume Module:												
Base Vol:	0	0	0	364	0	139	0	1701	886	250	2610	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	364	0	139	0	1701	886	250	2610	0
Added Vol:	0	0	0	-22	0	-16	0	643	0	36	140	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	342	0	123	0	2344	886	286	2750	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	342	0	123	0	2344	886	286	2750	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	342	0	123	0	2344	886	286	2750	0
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Vol:	0	0	0	342	0	123	0	2344	886	286	2750	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	342	0	123	0	2344	886	286	2750	0
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	0.00	3.00	1.00	2.00	3.00	0.00
Final Sat.:	0	0	0	3000	0	1650	0	4950	1650	3000	4950	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.11	0.00	0.07	0.00	0.47	0.54	0.10	0.56	0.00
Crit Volume:		0		171					886	143		
Crit Moves:				****					****	****		

Antioch Aviano Adult Community TIA
Cumulative + Project AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #19 Lone Tree Way/NB SR-4 Bypass (Jeffrey Way)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.916
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 180 Level Of Service: E

Street Name:	NB SR-4 Bypass (Jeffrey Way)						Lone Tree Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Permitted			Permitted			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	1 0	0 1	0	0 0	0 0	0	0 3	0 1	1	0 3	0 1
Volume Module:												
Base Vol:	850	0	482	0	0	0	0	1696	369	137	2010	441
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	850	0	482	0	0	0	0	1696	369	137	2010	441
Added Vol:	0	0	236	0	0	0	0	685	-64	0	176	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	850	0	718	0	0	0	0	2381	305	137	2186	441
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	850	0	718	0	0	0	0	2381	305	137	2186	441
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	850	0	718	0	0	0	0	2381	305	137	2186	441
RTOR Reduct:	0	0	137	0	0	0	0	0	305	0	0	0
RTOR Vol:	850	0	581	0	0	0	0	2381	0	137	2186	441
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	850	0	581	0	0	0	0	2381	0	137	2186	441
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	0.00	1.00	0.00	0.00	0.00	0.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	3000	0	1650	0	0	0	0	4950	1650	1650	4950	1650
Capacity Analysis Module:												
Vol/Sat:	0.28	0.00	0.35	0.00	0.00	0.00	0.00	0.48	0.00	0.08	0.44	0.27
Crit Volume:			581		0			794		137		
Crit Moves:			****					****		****		

Antioch Aviano Adult Community TIA
Cumulative + Project AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #20 Heidorn Ranch Road/Sand Creek Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.295
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 32 Level Of Service: A

Street Name:	Heidorn Ranch Road						Sand Creek Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 0	1 0	1	0 0	1 0	1	0 1	1 0	1	0 2	0 1
Volume Module:												
Base Vol:	5	6	11	50	4	19	16	195	5	11	214	171
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	5	6	11	50	4	19	16	195	5	11	214	171
Added Vol:	0	211	0	0	39	11	72	36	0	0	14	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	5	217	11	50	43	30	88	231	5	11	228	171
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	5	217	11	50	43	30	88	231	5	11	228	171
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	5	217	11	50	43	30	88	231	5	11	228	171
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	50
RTOR Vol:	5	217	11	50	43	30	88	231	5	11	228	121
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	5	217	11	50	43	30	88	231	5	11	228	121
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.95	0.05	1.00	0.59	0.41	1.00	1.96	0.04	1.00	2.00	1.00
Final Sat.:	1650	1570	80	1650	972	678	1650	3230	70	1650	3300	1650
Capacity Analysis Module:												
Vol/Sat:	0.00	0.14	0.14	0.03	0.04	0.04	0.05	0.07	0.07	0.01	0.07	0.07
Crit Volume:			228	50			88					121
Crit Moves:			****	****			****					****

Antioch Aviano Adult Community TIA
Cumulative + Project AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #21 SR-4 Bypass SB Ramps/Sand Creek Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.677
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 58 Level Of Service: B

Street Name:	SR-4 Bypass SB Ramps						Sand Creek Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Ignore		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0 0	0 0	1	0 1	0 1	0	0 2	0 1	0	0 2	0 1
Volume Module:												
Base Vol:	0	0	0	900	0	76	0	382	255	0	508	275
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	900	0	76	0	382	255	0	508	275
Added Vol:	0	0	0	10	0	14	0	36	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	910	0	90	0	418	255	0	508	275
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	910	0	90	0	418	255	0	508	275
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	910	0	90	0	418	255	0	508	275
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Vol:	0	0	0	910	0	90	0	418	255	0	508	275
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	910	0	90	0	418	255	0	508	275
Saturation Flow Module:												
Sat/Lane:	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.00	0.00	1.00	1.00	1.00	0.00	2.00	1.00	0.00	2.00	1.00
Final Sat.:	0	0	0	1720	1720	1720	0	3440	1720	0	3440	1720
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.53	0.00	0.05	0.00	0.12	0.15	0.00	0.15	0.16
Crit Volume:		0		910					255	0		
Crit Moves:				****					****	****		

Antioch Aviano Adult Community TIA
Cumulative + Project AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #22 SR-4 Bypass NB Ramps/Sand Creek Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.476
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 51 Level Of Service: A

Street Name:	SR-4 Bypass NB Ramps						Sand Creek Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Permitted			Protected			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 1	0 1	0	0 0	0 0	2	0 2	0 0	0	0 2	0 1
Volume Module:												
Base Vol:	14	0	293	0	0	0	307	975	0	0	534	653
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	14	0	293	0	0	0	307	975	0	0	534	653
Added Vol:	0	0	0	0	0	0	36	10	0	0	0	70
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	14	0	293	0	0	0	343	985	0	0	534	723
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	14	0	293	0	0	0	343	985	0	0	534	723
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	14	0	293	0	0	0	343	985	0	0	534	723
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Vol:	14	0	293	0	0	0	343	985	0	0	534	723
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	14	0	293	0	0	0	343	985	0	0	534	723
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	1.00	0.00	0.00	0.00	2.00	2.00	0.00	0.00	2.00	1.00
Final Sat.:	1650	1650	1650	0	0	0	3000	3300	0	0	3300	1650
Capacity Analysis Module:												
Vol/Sat:	0.01	0.00	0.18	0.00	0.00	0.00	0.11	0.30	0.00	0.00	0.16	0.44
Crit Volume:			293		0			493			267	
Crit Moves:			****					****				

Antioch Aviano Adult Community TIA
Cumulative + Project AM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #23 Mammoth/Deer Valley

Cycle (sec): 100 Critical Vol./Cap.(X): 0.351
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 35 Level Of Service: A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 2	0 0	0	0 1	1 0	1	0 0	0 1	0	0 0	0 0
Volume Module:												
Base Vol:	20	711	0	0	982	22	85	0	40	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	20	711	0	0	982	22	85	0	40	0	0	0
Added Vol:	0	-22	0	0	-6	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	20	689	0	0	976	22	85	0	40	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	20	689	0	0	976	22	85	0	40	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	20	689	0	0	976	22	85	0	40	0	0	0
RTOR Reduct:	0	0	0	0	0	0	0	0	20	0	0	0
RTOR Vol:	20	689	0	0	976	22	85	0	20	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	20	689	0	0	976	22	85	0	20	0	0	0
Saturation Flow Module:												
Sat/Lane:	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	0.00	0.00	1.96	0.04	1.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	1720	3440	0	0	3364	76	1720	0	1720	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.01	0.20	0.00	0.00	0.29	0.29	0.05	0.00	0.01	0.00	0.00	0.00
Crit Volume:	20					499	85				0	
Crit Moves:	****					****	****					

Antioch Aviano Adult Community TIA
Cumulative + Project PM

Impact Analysis Report
Level Of Service

Intersection	Base Del/ LOS Veh	V/ C	Future Del/ LOS Veh	V/ C	Change in
# 1 Lone Tree Way/Deer Valley Rd	B xxxxx	0.681	B xxxxx	0.682	+ 0.001 V/C
# 2 Deer Valley Road/Marita Drive	A xxxxx	0.341	A xxxxx	0.336	-0.005 V/C
# 3 Deer Valley Road/Prewitt Ranch	B xxxxx	0.625	B xxxxx	0.621	-0.004 V/C
# 4 Deer Valley Road/Wellness Way	B xxxxx	0.616	B xxxxx	0.620	+ 0.004 V/C
# 5 Deer Valley Road/Kaiser	A xxxxx	0.478	A xxxxx	0.483	+ 0.005 V/C
# 6 Deer Valley Road/Sand Creek Ro	A xxxxx	0.595	B xxxxx	0.671	+ 0.075 V/C
# 7 Kaiser/Sand Creek Road	A xxxxx	0.430	A xxxxx	0.434	+ 0.003 V/C
# 8 PARK/Sand Creek Road	A xxxxx	0.472	A xxxxx	0.483	+ 0.011 V/C
# 9 Edgewood South Access/Sand Cre	A xxxxx	0.181	A xxxxx	0.205	+ 0.024 V/C
# 10 Hillcrest Avenue/Sand Creek Ro	A xxxxx	0.593	A xxxxx	0.593	+ 0.000 V/C
# 11 Hillcrest Avenue/East Edgewood	A xxxxx	0.455	A xxxxx	0.493	+ 0.038 V/C
# 12 Hillcrest Ave/Prewett Ranch Dr	A xxxxx	0.545	B xxxxx	0.602	+ 0.057 V/C
# 13 Hillcrest Avenue/Vista Grande	A xxxxx	0.406	A xxxxx	0.460	+ 0.054 V/C
# 14 Lone Tree Way/Hillcrest Avenue	F xxxxx	1.007	F xxxxx	1.203	+ 0.197 V/C
# 15 Lone Tree Way/Vista Grande Dri	B xxxxx	0.637	B xxxxx	0.687	+ 0.050 V/C
# 16 Lone Tree Way/Heidorn Ranch Ro	C xxxxx	0.745	E xxxxx	0.924	+ 0.180 V/C
# 17 Lone Tree Way/Canada Valley Ro	F xxxxx	1.128	F xxxxx	1.192	+ 0.064 V/C
# 18 Lone Tree Way/SB SR-4 Bypass	D xxxxx	0.829	E xxxxx	0.936	+ 0.106 V/C
# 19 Lone Tree Way/NB SR-4 Bypass (	E xxxxx	0.990	F xxxxx	1.074	+ 0.084 V/C
# 20 Heidorn Ranch Road/Sand Creek	A xxxxx	0.222	A xxxxx	0.301	+ 0.079 V/C
# 21 SR-4 Bypass SB Ramps/Sand Cree	D xxxxx	0.824	D xxxxx	0.861	+ 0.037 V/C
# 22 SR-4 Bypass NB Ramps/Sand Cree	A xxxxx	0.565	A xxxxx	0.584	+ 0.019 V/C
# 23 Mammoth/Deer Valley	A xxxxx	0.353	A xxxxx	0.348	-0.005 V/C

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Antioch Aviano Adult Community TIA
Cumulative + Project PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #1 Lone Tree Way/Deer Valley Rd

Cycle (sec): 130 Critical Vol./Cap.(X): 0.682
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 106 Level Of Service: B

Street Name:	Deer Valley Road						Lone Tree Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	15	32	0	15	32	0	15	32	0	15	32	0
Lanes:	2	0 2	0 1	2	0 1	1 0	1	0 2	1 0	1	0 2	1 0
Volume Module:												
Base Vol:	373	364	167	307	355	24	124	1279	311	199	1119	293
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	373	364	167	307	355	24	124	1279	311	199	1119	293
Added Vol:	0	0	-17	13	0	0	0	46	0	-14	90	12
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	373	364	150	320	355	24	124	1325	311	185	1209	305
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	373	364	150	320	355	24	124	1325	311	185	1209	305
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	373	364	150	320	355	24	124	1325	311	185	1209	305
RTOR Reduct:	0	0	150	0	0	0	0	0	0	0	0	0
RTOR Vol:	373	364	0	320	355	24	124	1325	311	185	1209	305
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	373	364	0	320	355	24	124	1325	311	185	1209	305
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	2.00	1.00	2.00	1.87	0.13	1.00	2.43	0.57	1.00	2.40	0.60
Final Sat.:	3000	3300	1650	3000	3091	209	1650	4009	941	1650	3953	997
Capacity Analysis Module:												
Vol/Sat:	0.12	0.11	0.00	0.11	0.11	0.11	0.08	0.33	0.33	0.11	0.31	0.31
Crit Volume:	187				190			545		185		
Crit Moves:	****				****			****		****		

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Antioch Aviano Adult Community TIA
Cumulative + Project PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #2 Deer Valley Road/Marita Drive

Cycle (sec): 100 Critical Vol./Cap.(X): 0.336
Loss Time (sec): 3 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 15 Level Of Service: A

Street Name:	Deer Valley Road						Marita Drive					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 1	1 0	1	0 1	1 0	1	0 0	1 0	1	0 1	1 0
Volume Module:												
Base Vol:	15	813	5	32	813	21	15	0	8	42	4	126
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	15	813	5	32	813	21	15	0	8	42	4	126
Added Vol:	0	-17	0	0	-14	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	15	796	5	32	799	21	15	0	8	42	4	126
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	15	796	5	32	799	21	15	0	8	42	4	126
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	15	796	5	32	799	21	15	0	8	42	4	126
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Vol:	15	796	5	32	799	21	15	0	8	42	4	126
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	15	796	5	32	799	21	15	0	8	42	4	126
Saturation Flow Module:												
Sat/Lane:	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.99	0.01	1.00	1.95	0.05	1.00	0.00	1.00	1.00	0.03	0.97
Final Sat.:	1720	3419	21	1720	3352	88	1720	0	1720	1720	53	1667
Capacity Analysis Module:												
Vol/Sat:	0.01	0.23	0.23	0.02	0.24	0.24	0.01	0.00	0.00	0.02	0.08	0.08
Crit Volume:		401			32			15				130
Crit Moves:		****			****			****				****

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Antioch Aviano Adult Community TIA
Cumulative + Project PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #3 Deer Valley Road/Prewitt Ranch Drive

Cycle (sec): 100 Critical Vol./Cap.(X): 0.621
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 60 Level Of Service: B

Street Name:	Deer Valley Road						Prewitt Ranch Drive					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 1	1 0	1	0 1	1 0	1	0 0	1 0	1	0 1	1 0
Volume Module:												
Base Vol:	275	747	169	146	763	93	26	84	166	78	99	36
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	275	747	169	146	763	93	26	84	166	78	99	36
Added Vol:	0	-17	0	0	-14	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	275	730	169	146	749	93	26	84	166	78	99	36
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	275	730	169	146	749	93	26	84	166	78	99	36
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	275	730	169	146	749	93	26	84	166	78	99	36
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Vol:	275	730	169	146	749	93	26	84	166	78	99	36
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	275	730	169	146	749	93	26	84	166	78	99	36
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.62	0.38	1.00	1.78	0.22	1.00	0.34	0.66	1.00	0.73	0.27
Final Sat.:	1650	2680	620	1650	2936	364	1650	554	1096	1650	1210	440
Capacity Analysis Module:												
Vol/Sat:	0.17	0.27	0.27	0.09	0.26	0.26	0.02	0.15	0.15	0.05	0.08	0.08
Crit Volume:	275					421		250		78		
Crit Moves:	****					****		****		****		

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Antioch Aviano Adult Community TIA
Cumulative + Project PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #4 Deer Valley Road/Wellness Way

Cycle (sec): 100 | Critical Vol./Cap.(X): 0.620
Loss Time (sec): 0 (Y+R=4.0 sec) | Average Delay (sec/veh): xxxxxx
Optimal Cycle: 60 | Level Of Service: B

Street Name:	Deer Valley Road						Wellness Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 2	0 1	2	0 1	1 0	1	0 0	1 0	1	0 0	1 0
Volume Module:												
Base Vol:	239	1090	31	45	902	26	30	3	254	56	6	74
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	239	1090	31	45	902	26	30	3	254	56	6	74
Added Vol:	0	18	0	0	13	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	239	1108	31	45	915	26	30	3	254	56	6	74
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	239	1108	31	45	915	26	30	3	254	56	6	74
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	239	1108	31	45	915	26	30	3	254	56	6	74
RTOR Reduct:	0	0	31	0	0	0	0	0	0	0	0	0
RTOR Vol:	239	1108	0	45	915	26	30	3	254	56	6	74
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	239	1108	0	45	915	26	30	3	254	56	6	74
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	2.00	1.94	0.06	1.00	0.01	0.99	1.00	0.07	0.92
Final Sat.:	1650	3300	1650	3000	3209	91	1650	19	1631	1650	124	1526
Capacity Analysis Module:												
Vol/Sat:	0.14	0.34	0.00	0.02	0.29	0.29	0.02	0.16	0.16	0.03	0.05	0.05
Crit Volume:	239				471			257		56		
Crit Moves:	****				****			****		****		

Antioch Aviano Adult Community TIA
Cumulative + Project PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #5 Deer Valley Road/Kaiser

Cycle (sec): 100 | Critical Vol./Cap.(X): 0.483
Loss Time (sec): 0 (Y+R=4.0 sec) | Average Delay (sec/veh): xxxxxx
Optimal Cycle: 44 | Level Of Service: A

Street Name:	Deer Valley Road						Kaiser					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0 2	0 1	1	0 2	0 0	0	0 0	0 0	1	0 0	0 1
Volume Module:												
Base Vol:	0	1077	32	116	1096	0	0	0	0	94	0	283
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1077	32	116	1096	0	0	0	0	94	0	283
Added Vol:	0	18	0	0	13	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1095	32	116	1109	0	0	0	0	94	0	283
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1095	32	116	1109	0	0	0	0	94	0	283
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1095	32	116	1109	0	0	0	0	94	0	283
RTOR Reduct:	0	0	32	0	0	0	0	0	0	0	0	116
RTOR Vol:	0	1095	0	116	1109	0	0	0	0	94	0	167
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1095	0	116	1109	0	0	0	0	94	0	167
Saturation Flow Module:												
Sat/Lane:	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	2.00	1.00	1.00	2.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Final Sat.:	0	3440	1720	1720	3440	0	0	0	0	1720	0	1720
Capacity Analysis Module:												
Vol/Sat:	0.00	0.32	0.00	0.07	0.32	0.00	0.00	0.00	0.00	0.05	0.00	0.10
Crit Volume:		547		116				0				167
Crit Moves:		****		****								****

Antioch Aviano Adult Community TIA
Cumulative + Project PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #6 Deer Valley Road/Sand Creek Road

Cycle (sec): 100 | Critical Vol./Cap.(X): 0.671
Loss Time (sec): 0 (Y+R=4.0 sec) | Average Delay (sec/veh): xxxxxx
Optimal Cycle: 69 | Level Of Service: B

Street Name:	Deer Valley Road						Sand Creek Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 1	1 0	1	0 1	1 0	1	0 1	1 0	1	0 2	0 1
Volume Module:												
Base Vol:	74	668	47	348	723	119	71	288	52	107	409	370
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	74	668	47	348	723	119	71	288	52	107	409	370
Added Vol:	0	18	47	0	13	0	0	6	0	89	3	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	74	686	94	348	736	119	71	294	52	196	412	370
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	74	686	94	348	736	119	71	294	52	196	412	370
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	74	686	94	348	736	119	71	294	52	196	412	370
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	348
RTOR Vol:	74	686	94	348	736	119	71	294	52	196	412	22
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	74	686	94	348	736	119	71	294	52	196	412	22
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.76	0.24	1.00	1.72	0.28	1.00	1.70	0.30	1.00	2.00	1.00
Final Sat.:	1650	2902	398	1650	2841	459	1650	2804	496	1650	3300	1650
Capacity Analysis Module:												
Vol/Sat:	0.04	0.24	0.24	0.21	0.26	0.26	0.04	0.10	0.10	0.12	0.12	0.01
Crit Volume:		390		348				173		196		
Crit Moves:		****		****				****		****		

Antioch Aviano Adult Community TIA
Cumulative + Project PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #7 Kaiser/Sand Creek Road

Cycle (sec): 100 | Critical Vol./Cap.(X): 0.434
Loss Time (sec): 0 (Y+R=4.0 sec) | Average Delay (sec/veh): xxxxxx
Optimal Cycle: 40 | Level Of Service: A

Street Name:	Kaiser						Sand Creek Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2	0 0	1 1	1	0 0	1 0	1	0 2	1 0	2	0 2	1 0
Volume Module:												
Base Vol:	377	26	411	69	62	54	17	432	234	277	455	24
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	377	26	411	69	62	54	17	432	234	277	455	24
Added Vol:	0	0	0	0	0	0	0	53	0	0	93	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	377	26	411	69	62	54	17	485	234	277	548	24
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	377	26	411	69	62	54	17	485	234	277	548	24
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	377	26	411	69	62	54	17	485	234	277	548	24
RTOR Reduct:	0	0	152	0	0	0	0	0	0	0	0	0
RTOR Vol:	377	26	259	69	62	54	17	485	234	277	548	24
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	377	26	259	69	62	54	17	485	234	277	548	24
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	0.91	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00
Lanes:	2.00	0.18	1.82	1.00	0.53	0.47	1.00	2.02	0.98	2.00	2.87	0.13
Final Sat.:	3000	301	2726	1650	882	768	1650	3339	1611	3000	4742	208
Capacity Analysis Module:												
Vol/Sat:	0.13	0.09	0.09	0.04	0.07	0.07	0.01	0.15	0.15	0.09	0.12	0.12
Crit Volume:	189				116				240	139		
Crit Moves:	****				****				****	****		

Antioch Aviano Adult Community TIA
Cumulative + Project PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #8 PARK/Sand Creek Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.483
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 44 Level Of Service: A

Street Name:	PARK						Sand Creek Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 0	1 0	1	0 0	1 0	1	0 2	1 0	1	0 2	1 0
Volume Module:												
Base Vol:	88	13	197	20	15	66	66	762	108	259	611	23
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	88	13	197	20	15	66	66	762	108	259	611	23
Added Vol:	0	0	0	0	0	0	0	53	0	0	93	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	88	13	197	20	15	66	66	815	108	259	704	23
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	88	13	197	20	15	66	66	815	108	259	704	23
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	88	13	197	20	15	66	66	815	108	259	704	23
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Vol:	88	13	197	20	15	66	66	815	108	259	704	23
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	88	13	197	20	15	66	66	815	108	259	704	23
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.06	0.94	1.00	0.19	0.81	1.00	2.65	0.35	1.00	2.91	0.09
Final Sat.:	1650	102	1548	1650	306	1344	1650	4371	579	1650	4793	157
Capacity Analysis Module:												
Vol/Sat:	0.05	0.13	0.13	0.01	0.05	0.05	0.04	0.19	0.19	0.16	0.15	0.15
Crit Volume:			210	20				308		259		
Crit Moves:			****	****				****		****		

Antioch Aviano Adult Community TIA
Cumulative + Project PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #9 Edgewood South Access/Sand Creek Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.205
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 23 Level Of Service: A

Street Name:	Edgewood South Access						Sand Creek Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0 0	0	1	0 0	1	1	0 3	0 0	0	0 2	1 0
Volume Module:												
Base Vol:	0	0	0	0	0	0	0	980	0	0	896	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	980	0	0	896	0
Added Vol:	0	0	0	10	0	9	14	39	0	0	84	8
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	10	0	9	14	1019	0	0	980	8
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	10	0	9	14	1019	0	0	980	8
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	10	0	9	14	1019	0	0	980	8
RTOR Reduct:	0	0	0	0	0	9	0	0	0	0	0	0
RTOR Vol:	0	0	0	10	0	0	14	1019	0	0	980	8
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	10	0	0	14	1019	0	0	980	8
Saturation Flow Module:												
Sat/Lane:	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	3.00	0.00	0.00	2.98	0.02
Final Sat.:	0	0	0	1720	0	1720	1720	5160	0	0	5118	42
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.20	0.00	0.00	0.19	0.19
Crit Volume:		0		10			14				329	
Crit Moves:				****			****				****	

Antioch Aviano Adult Community TIA
Cumulative + Project PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #10 Hillcrest Avenue/Sand Creek Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.593
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 56 Level Of Service: A

Street Name:	Hillcrest Avenue						Sand Creek Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2	0 1	1 0	1	0 1	1 1	2	0 2	1 0	1	0 2	1 0
Volume Module:												
Base Vol:	242	366	73	29	714	499	453	167	358	131	155	26
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	242	366	73	29	714	499	453	167	358	131	155	26
Added Vol:	0	0	0	0	0	2	3	46	0	0	91	8
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	242	366	73	29	714	501	456	213	358	131	246	34
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	242	366	73	29	714	501	456	213	358	131	246	34
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	242	366	73	29	714	501	456	213	358	131	246	34
RTOR Reduct:	0	0	0	0	0	251	0	0	0	0	0	0
RTOR Vol:	242	366	73	29	714	250	456	213	358	131	246	34
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	242	366	73	29	714	250	456	213	358	131	246	34
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	0.91	1.00	1.00	1.00	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	1.67	0.33	1.00	2.00	1.00	2.00	2.00	1.00	1.00	2.64	0.36
Final Sat.:	3000	2751	549	1650	3300	1500	3000	3300	1650	1650	4349	601
Capacity Analysis Module:												
Vol/Sat:	0.08	0.13	0.13	0.02	0.22	0.17	0.15	0.06	0.22	0.08	0.06	0.06
Crit Volume:	121				357				358	131		
Crit Moves:	****				****				****	****		

Antioch Aviano Adult Community TIA
Cumulative + Project PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #11 Hillcrest Avenue/East Edgewood Access

Cycle (sec): 100 Critical Vol./Cap.(X): 0.493
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 45 Level Of Service: A

Street Name:	Hillcrest Avenue						East Edgewood Access					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 1	1 0	1	0 1	1 0	1	0 0	1 0	1	0 0	1 0
Volume Module:												
Base Vol:	0	778	72	144	1068	0	0	0	0	171	0	214
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	778	72	144	1068	0	0	0	0	171	0	214
Added Vol:	11	0	0	0	0	49	30	0	2	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	11	778	72	144	1068	49	30	0	2	171	0	214
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	11	778	72	144	1068	49	30	0	2	171	0	214
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	11	778	72	144	1068	49	30	0	2	171	0	214
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Vol:	11	778	72	144	1068	49	30	0	2	171	0	214
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	11	778	72	144	1068	49	30	0	2	171	0	214
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.83	0.17	1.00	1.91	0.09	1.00	0.00	1.00	1.00	0.00	1.00
Final Sat.:	1650	3020	280	1650	3155	145	1650	0	1650	1650	0	1650
Capacity Analysis Module:												
Vol/Sat:	0.01	0.26	0.26	0.09	0.34	0.34	0.02	0.00	0.00	0.10	0.00	0.13
Crit Volume:	11				559		30					214
Crit Moves:	****				****		****					****

Antioch Aviano Adult Community TIA
Cumulative + Project PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #12 Hillcrest Ave/Prewett Ranch Dr

Cycle (sec): 100 Critical Vol./Cap.(X): 0.602
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 57 Level Of Service: B

Street Name:	Hillcrest Ave						Prewett Dr					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 1	1 0	1	0 1	1 0	1	0 0	1 0	1	0 0	1 0
Volume Module:												
Base Vol:	88	798	101	22	1036	173	120	28	65	114	20	7
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	88	798	101	22	1036	173	120	28	65	114	20	7
Added Vol:	0	66	0	0	187	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	88	864	101	22	1223	173	120	28	65	114	20	7
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	88	864	101	22	1223	173	120	28	65	114	20	7
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	88	864	101	22	1223	173	120	28	65	114	20	7
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Vol:	88	864	101	22	1223	173	120	28	65	114	20	7
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	88	864	101	22	1223	173	120	28	65	114	20	7
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.79	0.21	1.00	1.75	0.25	1.00	0.30	0.70	1.00	0.74	0.26
Final Sat.:	1650	2955	345	1650	2891	409	1650	497	1153	1650	1222	428
Capacity Analysis Module:												
Vol/Sat:	0.05	0.29	0.29	0.01	0.42	0.42	0.07	0.06	0.06	0.07	0.02	0.02
Crit Volume:	88					698		93		114		
Crit Moves:	****					****		****		****		

Antioch Aviano Adult Community TIA
Cumulative + Project PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #13 Hillcrest Avenue/Vista Grande Drive

Cycle (sec): 100 Critical Vol./Cap.(X): 0.460
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 82 Level Of Service: A

Street Name:	Hillcrest Avenue						Vista Grande Drive					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0 1	1 0	1	0 2	0 0	0	0 0	0 0	1	0 0	0 1
Volume Module:												
Base Vol:	0	921	91	103	1238	0	0	0	0	79	0	50
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	921	91	103	1238	0	0	0	0	79	0	50
Added Vol:	0	66	0	0	187	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	987	91	103	1425	0	0	0	0	79	0	50
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	987	91	103	1425	0	0	0	0	79	0	50
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	987	91	103	1425	0	0	0	0	79	0	50
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	50
RTOR Vol:	0	987	91	103	1425	0	0	0	0	79	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	987	91	103	1425	0	0	0	0	79	0	0
Saturation Flow Module:												
Sat/Lane:	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	1.83	0.17	1.00	2.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Final Sat.:	0	3150	290	1720	3440	0	0	0	0	1720	0	1720
Capacity Analysis Module:												
Vol/Sat:	0.00	0.31	0.31	0.06	0.41	0.00	0.00	0.00	0.00	0.05	0.00	0.00
Crit Volume:		539			713			0		79		
Crit Moves:		****			****					****		

Antioch Aviano Adult Community TIA
Cumulative + Project PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #14 Lone Tree Way/Hillcrest Avenue

Cycle (sec): 130 Critical Vol./Cap.(X): 1.203
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 180 Level Of Service: F

Street Name:	Hillcrest Avenue						Lone Tree Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 1	1 0	2	0 2	0 1	1	0 2	1 0	1	0 3	0 1
Volume Module:												
Base Vol:	326	309	247	848	603	117	277	1356	251	381	1170	663
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	326	309	247	848	603	117	277	1356	251	381	1170	663
Added Vol:	16	-48	98	54	-29	-53	0	87	26	190	125	39
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	342	261	345	902	574	64	277	1443	277	571	1295	702
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	342	261	345	902	574	64	277	1443	277	571	1295	702
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	342	261	345	902	574	64	277	1443	277	571	1295	702
RTOR Reduct:	0	0	0	0	0	64	0	0	0	0	0	496
RTOR Vol:	342	261	345	902	574	0	277	1443	277	571	1295	206
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	342	261	345	902	574	0	277	1443	277	571	1295	206
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	1.00	2.00	2.00	1.00	1.00	2.52	0.48	1.00	3.00	1.00
Final Sat.:	1650	1650	1650	3000	3300	1650	1650	4153	797	1650	4950	1650
Capacity Analysis Module:												
Vol/Sat:	0.21	0.16	0.21	0.30	0.17	0.00	0.17	0.35	0.35	0.35	0.26	0.12
Crit Volume:			345	451					573	571		
Crit Moves:			****	****					****	****		

Antioch Aviano Adult Community TIA
Cumulative + Project PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #15 Lone Tree Way/Vista Grande Drive

Cycle (sec): 130 Critical Vol./Cap.(X): 0.687
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 59 Level Of Service: B

Street Name:	Vista Grande Drive						Lone Tree Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 0	1 0	1	0 0	1 0	1	0 2	1 0	1	0 2	1 0
Volume Module:												
Base Vol:	90	49	141	80	24	115	75	2006	91	127	1912	62
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	90	49	141	80	24	115	75	2006	91	127	1912	62
Added Vol:	0	0	2	2	0	0	0	237	0	3	352	3
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	90	49	143	82	24	115	75	2243	91	130	2264	65
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	90	49	143	82	24	115	75	2243	91	130	2264	65
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	90	49	143	82	24	115	75	2243	91	130	2264	65
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Vol:	90	49	143	82	24	115	75	2243	91	130	2264	65
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	90	49	143	82	24	115	75	2243	91	130	2264	65
Saturation Flow Module:												
Sat/Lane:	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.26	0.74	1.00	0.17	0.83	1.00	2.88	0.12	1.00	2.92	0.08
Final Sat.:	1720	439	1281	1720	297	1423	1720	4959	201	1720	5016	144
Capacity Analysis Module:												
Vol/Sat:	0.05	0.11	0.11	0.05	0.08	0.08	0.04	0.45	0.45	0.08	0.45	0.45
Crit Volume:		192		82				778		130		
Crit Moves:		****		****				****		****		

Antioch Aviano Adult Community TIA
Cumulative + Project PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #16 Lone Tree Way/Heidorn Ranch Road

Cycle (sec): 120 Critical Vol./Cap.(X): 0.924
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 180 Level Of Service: E

Street Name:	Heidorn Ranch Road						Lone Tree Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2	0	1	0	1	1	0	0	1	0	1	0	2	1	1	0	1	0	2	1	1
Volume Module:																					
Base Vol:	250	21	182	38	19	13	7	2421	126	204	2483	39
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	250	21	182	38	19	13	7	2421	126	204	2483	39
Added Vol:	0	0	61	0	0	0	0	242	0	216	358	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	250	21	243	38	19	13	7	2663	126	420	2841	39
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	250	21	243	38	19	13	7	2663	126	420	2841	39
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	250	21	243	38	19	13	7	2663	126	420	2841	39
RTOR Reduct:	0	0	243	0	0	0	0	0	0	0	0	38
RTOR Vol:	250	21	0	38	19	13	7	2663	126	420	2841	1
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	250	21	0	38	19	13	7	2663	126	420	2841	1
Saturation Flow Module:																					
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91
Lanes:	2.00	1.00	1.00	1.00	0.59	0.41	1.00	2.86	0.14	1.00	3.00	1.00
Final Sat.:	3000	1650	1650	1650	980	670	1650	4726	224	1650	4950	1500
Capacity Analysis Module:																					
Vol/Sat:	0.08	0.01	0.00	0.02	0.02	0.02	0.00	0.56	0.56	0.25	0.57	0.00
Crit Volume:	125			38					930	420		
Crit Moves:	****			****					****	****		

Antioch Aviano Adult Community TIA
Cumulative + Project PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #17 Lone Tree Way/Canada Valley Road

Cycle (sec): 100 Critical Vol./Cap.(X): 1.192
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 180 Level Of Service: F

Street Name:	Canada Valley Road						Lone Tree Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2	0	0	1	1	1	0	1	0	1	1	0	3	0	1	2	0	3	0	1
Volume Module:																					
Base Vol:	189	93	473	593	78	105	189	2445	100	575	2397	425
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	189	93	473	593	78	105	189	2445	100	575	2397	425
Added Vol:	3	0	0	5	0	0	0	301	2	0	571	6
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	192	93	473	598	78	105	189	2746	102	575	2968	431
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	192	93	473	598	78	105	189	2746	102	575	2968	431
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	192	93	473	598	78	105	189	2746	102	575	2968	431
RTOR Reduct:	0	0	316	0	0	105	0	0	102	0	0	431
RTOR Vol:	192	93	157	598	78	0	189	2746	0	575	2968	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	192	93	157	598	78	0	189	2746	0	575	2968	0
Saturation Flow Module:																					
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	0.91	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00
Lanes:	2.00	0.74	1.26	1.00	1.00	1.00	1.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3000	1229	1883	1650	1650	1650	1650	4950	1650	3000	4950	1650
Capacity Analysis Module:																					
Vol/Sat:	0.06	0.08	0.08	0.36	0.05	0.00	0.11	0.55	0.00	0.19	0.60	0.00
Crit Volume:			125	598				915		288		
Crit Moves:			****	****				****		****		

Antioch Aviano Adult Community TIA
Cumulative + Project PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #18 Lone Tree Way/SB SR-4 Bypass

Cycle (sec): 100 Critical Vol./Cap.(X): 0.936
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 180 Level Of Service: E

Street Name:	SB SR-4 Bypass						Lone Tree Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Protected			Permitted			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0	0	0	0	1	1	0	0	1	0	0	3	0	1	2	0	3	0	0
Volume Module:																					
Base Vol:	0	0	0	473	0	261	0	2453	1020	366	3323	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	473	0	261	0	2453	1020	366	3323	0
Added Vol:	0	0	0	-52	0	-39	0	306	0	215	615	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	421	0	222	0	2759	1020	581	3938	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	421	0	222	0	2759	1020	581	3938	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	421	0	222	0	2759	1020	581	3938	0
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Vol:	0	0	0	421	0	222	0	2759	1020	581	3938	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	421	0	222	0	2759	1020	581	3938	0
Saturation Flow Module:																					
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	0.00	3.00	1.00	2.00	3.00	0.00
Final Sat.:	0	0	0	3000	0	1650	0	4950	1650	3000	4950	0
Capacity Analysis Module:																					
Vol/Sat:	0.00	0.00	0.00	0.14	0.00	0.13	0.00	0.56	0.62	0.19	0.80	0.00
Crit Volume:		0		211				920			1313	
Crit Moves:				****							****	

Antioch Aviano Adult Community TIA
Cumulative + Project PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #19 Lone Tree Way/NB SR-4 Bypass (Jeffrey Way)

Cycle (sec): 100 Critical Vol./Cap.(X): 1.074
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 180 Level Of Service: F

Street Name:	NB SR-4 Bypass (Jeffrey Way)						Lone Tree Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Permitted			Permitted			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	1	0	0	1	0	0	0	0	0	0	3	0	1	1	0	3	0	1
Volume Module:																					
Base Vol:	1229	0	417	0	0	0	0	2576	350	99	2460	423
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	1229	0	417	0	0	0	0	2576	350	99	2460	423
Added Vol:	0	0	67	0	0	0	0	308	-54	0	830	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	1229	0	484	0	0	0	0	2884	296	99	3290	423
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	1229	0	484	0	0	0	0	2884	296	99	3290	423
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	1229	0	484	0	0	0	0	2884	296	99	3290	423
RTOR Reduct:	0	0	99	0	0	0	0	0	296	0	0	0
RTOR Vol:	1229	0	385	0	0	0	0	2884	0	99	3290	423
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	1229	0	385	0	0	0	0	2884	0	99	3290	423
Saturation Flow Module:																					
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	0.00	1.00	0.00	0.00	0.00	0.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	3000	0	1650	0	0	0	0	4950	1650	1650	4950	1650
Capacity Analysis Module:																					
Vol/Sat:	0.41	0.00	0.23	0.00	0.00	0.00	0.00	0.58	0.00	0.06	0.66	0.26
Crit Volume:	615				0			961			1097	
Crit Moves:	****										****	

Antioch Aviano Adult Community TIA
Cumulative + Project PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #20 Heidorn Ranch Road/Sand Creek Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.301
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 33 Level Of Service: A

Street Name:	Heidorn Ranch Road						Sand Creek Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	0 1	0	1	0 0 1	0	1	0 1 1	0	1	0 2 0 1
Volume Module:												
Base Vol:	5	11	13	179	12	14	15	264	5	12	297	104
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	5	11	13	179	12	14	15	264	5	12	297	104
Added Vol:	0	97	0	0	186	69	18	28	0	0	30	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	5	108	13	179	198	83	33	292	5	12	327	104
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	5	108	13	179	198	83	33	292	5	12	327	104
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	5	108	13	179	198	83	33	292	5	12	327	104
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	104
RTOR Vol:	5	108	13	179	198	83	33	292	5	12	327	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	5	108	13	179	198	83	33	292	5	12	327	0
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.89	0.11	1.00	0.70	0.30	1.00	1.97	0.03	1.00	2.00	1.00
Final Sat.:	1650	1473	177	1650	1163	487	1650	3244	56	1650	3300	1650
Capacity Analysis Module:												
Vol/Sat:	0.00	0.07	0.07	0.11	0.17	0.17	0.02	0.09	0.09	0.01	0.10	0.00
Crit Volume:		121			179			33			164	
Crit Moves:		****			****			****			****	

Antioch Aviano Adult Community TIA
Cumulative + Project PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #21 SR-4 Bypass SB Ramps/Sand Creek Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.861
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 134 Level Of Service: D

Street Name:	SR-4 Bypass SB Ramps						Sand Creek Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Ignore		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0	0 0 0	1	0	1 0 1	0	0	2 0 1	0	0	2 0 1
Volume Module:												
Base Vol:	0	0	0	1080	0	195	0	321	80	0	675	152
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	1080	0	195	0	321	80	0	675	152
Added Vol:	0	0	0	64	0	30	0	28	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	1144	0	225	0	349	80	0	675	152
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	1144	0	225	0	349	80	0	675	152
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	1144	0	225	0	349	80	0	675	152
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Vol:	0	0	0	1144	0	225	0	349	80	0	675	152
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	1144	0	225	0	349	80	0	675	152
Saturation Flow Module:												
Sat/Lane:	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.00	0.00	1.00	1.00	1.00	0.00	2.00	1.00	0.00	2.00	1.00
Final Sat.:	0	0	0	1720	1720	1720	0	3440	1720	0	3440	1720
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.67	0.00	0.13	0.00	0.10	0.05	0.00	0.20	0.09
Crit Volume:		0			1144			0			338	
Crit Moves:					****			****			****	

Antioch Aviano Adult Community TIA
Cumulative + Project PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #22 SR-4 Bypass NB Ramps/Sand Creek Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.584
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 110 Level Of Service: A

Street Name:	SR-4 Bypass NB Ramps						Sand Creek Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Permitted			Protected			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	1 0 1	0	0	0 0 0	2	0	2 0 0	0	0	2 0 1
Volume Module:												
Base Vol:	14	0	308	0	0	0	154	1247	0	0	813	614
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	14	0	308	0	0	0	154	1247	0	0	813	614
Added Vol:	0	0	0	0	0	0	28	64	0	0	0	13
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	14	0	308	0	0	0	182	1311	0	0	813	627
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	14	0	308	0	0	0	182	1311	0	0	813	627
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	14	0	308	0	0	0	182	1311	0	0	813	627
RTOR Reduct:	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Vol:	14	0	308	0	0	0	182	1311	0	0	813	627
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	14	0	308	0	0	0	182	1311	0	0	813	627
Saturation Flow Module:												
Sat/Lane:	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	1.00	0.00	0.00	0.00	2.00	2.00	0.00	0.00	2.00	1.00
Final Sat.:	1650	1650	1650	0	0	0	3000	3300	0	0	3300	1650
Capacity Analysis Module:												
Vol/Sat:	0.01	0.00	0.19	0.00	0.00	0.00	0.06	0.40	0.00	0.00	0.25	0.38
Crit Volume:			308			0		656			407	
Crit Moves:			****					****				

Antioch Aviano Adult Community TIA
Cumulative + Project PM

Level Of Service Computation Report
CCTALOS Method (Future Volume Alternative)

Intersection #23 Mammoth/Deer Valley

Cycle (sec): 100 Critical Vol./Cap.(X): 0.348
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 35 Level Of Service: A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	2 0 0	0	0	1 1 0	1	0	0 1	0	0	0 0 0
Volume Module:												
Base Vol:	60	1134	0	0	943	50	40	0	30	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	60	1134	0	0	943	50	40	0	30	0	0	0
Added Vol:	0	-17	0	0	-14	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	60	1117	0	0	929	50	40	0	30	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	60	1117	0	0	929	50	40	0	30	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	60	1117	0	0	929	50	40	0	30	0	0	0
RTOR Reduct:	0	0	0	0	0	0	0	0	30	0	0	0
RTOR Vol:	60	1117	0	0	929	50	40	0	0	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	60	1117	0	0	929	50	40	0	0	0	0	0
Saturation Flow Module:												
Sat/Lane:	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	0.00	0.00	1.90	0.10	1.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	1720	3440	0	0	3264	176	1720	0	1720	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.03	0.32	0.00	0.00	0.28	0.28	0.02	0.00	0.00	0.00	0.00	0.00
Crit Volume:		559		0			40				0	
Crit Moves:		****			****			****				

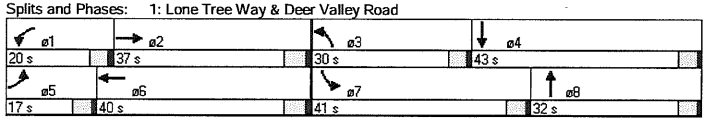
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	4867	0	1770	4948	0	3433	3383	0	*2000	3522	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	4867	0	1770	4948	0	3433	3383	0	1770	3522	0
Satd. Flow (RTOR)		76			39			46			3	
Volume (vph)	60	1200	485	289	1124	252	430	339	142	492	530	20
Lane Group Flow (vph)	71	1983	0	357	1699	0	500	559	0	757	846	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Total Split (s)	17.0	37.0	0.0	20.0	40.0	0.0	30.0	32.0	0.0	41.0	43.0	0.0
Act Effct Green (s)	11.5	36.9		17.0	44.5		25.9	26.1		38.0	38.2	
Actuated g/C Ratio	0.09	0.28		0.13	0.34		0.20	0.20		0.29	0.29	
v/c Ratio	0.45	1.38		1.55	0.99		0.73	0.78		1.29	0.82	
Uniform Delay, d1	57.4	44.1		56.5	42.2		48.9	45.0		46.0	42.3	
Delay	55.8	172.9		227.6	61.2		40.2	58.0		151.8	42.6	
LOS	E	F		F	E		D	E		F	D	
Approach Delay		168.9			90.1			49.6			94.2	
Approach LOS		F			F			D			F	
Queue Length 50th (ft)	58	~816		~408	~577		159	246		~814	346	
Queue Length 95th (ft)	100	#853		m#469	#602		178	294		#621	273	
Internal Link Dist (ft)		900			1588			664			709	
50th Up Block Time (%)										17%		
95th Up Block Time (%)												
Turn Bay Length (ft)	195			195			180			150		
50th Bay Block Time %		62%		86%	13%		3%	31%		61%	40%	
95th Bay Block Time %		65%		88%	22%		4%	26%		56%	32%	
Queuing Penalty (veh)		45		494	63		9	142		247	273	

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 54 (42%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.55
Intersection Signal Delay: 108.6 Intersection LOS: F
Intersection Capacity Utilization 131.2% ICU Level of Service H

* User Entered Value
– Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Lone Tree Way & Deer Valley Road

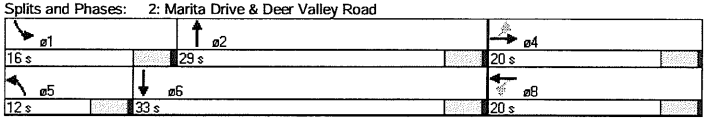


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	1676	0	1770	1598	0	1770	3522	0	1770	3532	0
Flt Permitted	0.745			0.736			0.950			0.950		
Satd. Flow (perm)	1388	1676	0	1371	1598	0	1770	3522	0	1770	3532	0
Satd. Flow (RTOR)		22			18			7			2	
Volume (vph)	18	10	20	12	1	16	65	883	33	195	1019	13
Lane Group Flow (vph)	20	33	0	13	19	0	72	1018	0	217	1146	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Total Split (s)	20.0	20.0	0.0	20.0	20.0	0.0	12.0	29.0	0.0	16.0	33.0	0.0
Act Effct Green (s)	7.5	7.5		7.5	7.5		8.2	40.4		11.9	49.3	
Actuated g/C Ratio	0.12	0.12		0.12	0.12		0.13	0.62		0.18	0.76	
v/c Ratio	0.12	0.16		0.08	0.10		0.32	0.46		0.67	0.43	
Uniform Delay, d1	27.8	9.2		27.6	1.4		28.1	7.3		24.7	4.6	
Delay	25.4	14.8		25.2	13.1		32.9	4.8		31.7	4.1	
LOS	C	B		C	B		C	A		C	A	
Approach Delay		18.8			18.0			6.7			8.5	
Approach LOS		B			B			A			A	
Queue Length 50th (ft)	7	4		5	0		31	39		126	172	
Queue Length 95th (ft)	25	26		18	17		m57	98		m120	m151	
Internal Link Dist (ft)		346			300			2263			664	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	40			100			175			125		
50th Bay Block Time %										5%	9%	
95th Bay Block Time %								4%			7%	
Queuing Penalty (veh)										14	17	

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 16 (25%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.67
Intersection Signal Delay: 8.0 Intersection LOS: A
Intersection Capacity Utilization 53.6% ICU Level of Service A
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Marita Drive & Deer Valley Road

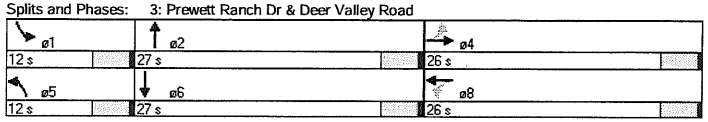


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	1762	0	1770	1742	0	1770	3476	0	1770	3468	0
Flt Permitted	0.229			0.289			0.950			0.950		
Satd. Flow (perm)	427	1762	0	538	1742	0	1770	3476	0	1770	3468	0
Satd. Flow (RTOR)		48			65			26			30	
Volume (vph)	97	246	139	49	246	185	72	638	86	136	816	127
Lane Group Flow (vph)	108	427	0	54	479	0	80	805	0	151	1048	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Total Split (s)	26.0	26.0	0.0	26.0	26.0	0.0	12.0	27.0	0.0	12.0	27.0	0.0
Act Effct Green (s)	20.3	20.3		20.3	20.3		8.3	29.1		8.7	29.3	
Actuated g/C Ratio	0.31	0.31		0.31	0.31		0.13	0.45		0.13	0.45	
v/c Ratio	0.81	0.73		0.32	0.81		0.35	0.51		0.63	0.66	
Uniform Delay, d1	20.6	17.5		17.1	17.6		26.9	12.9		27.9	14.1	
Delay	36.7	17.3		16.7	18.9		35.3	4.7		21.8	18.8	
LOS	D	B		B	B		D	A		C	B	
Approach Delay		21.2			18.6			7.5			19.2	
Approach LOS		C			B			A			B	
Queue Length 50th (ft)	36	123		15	139		32	40		57	250	
Queue Length 95th (ft)	#116	213		43	#253		71	56		75	288	
Internal Link Dist (ft)		416			350			970			2263	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	155			80			140			140		
50th Bay Block Time %					32%						35%	
95th Bay Block Time %		23%			47%						32%	
Queuing Penalty (veh)		12			21						50	

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 16 (25%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.81
Intersection Signal Delay: 16.2 Intersection LOS: B
Intersection Capacity Utilization 80.2% ICU Level of Service D
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Prewett Ranch Dr & Deer Valley Road

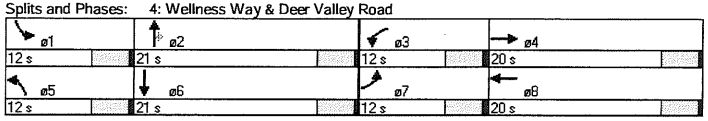


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	1611	0	1770	1608	0	1770	3539	1583	1770	3529	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	1611	0	1770	1608	0	1770	3539	1583	1770	3529	0
Satd. Flow (RTOR)		99			42				73		3	
Volume (vph)	115	10	89	28	4	38	215	599	66	86	925	16
Lane Group Flow (vph)	128	110	0	31	46	0	239	666	73	96	1046	0
Turn Type	Prot			Prot			Prot		Perm	Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			
Total Split (s)	12.0	20.0	0.0	12.0	20.0	0.0	12.0	21.0	21.0	12.0	21.0	0.0
Act Effct Green (s)	8.5	8.7		7.5	7.6		9.0	38.6	38.6	8.4	35.5	
Actuated g/C Ratio	0.13	0.13		0.12	0.12		0.14	0.59	0.59	0.13	0.55	
v/c Ratio	0.55	0.36		0.15	0.20		0.98	0.32	0.08	0.42	0.54	
Uniform Delay, d1	27.5	2.6		29.0	2.5		27.9	9.1	0.0	27.1	11.6	
Delay	26.8	7.8		25.6	10.0		78.9	1.6	0.0	31.9	6.9	
LOS	C	A		C	B		E	A	A	C	A	
Approach Delay		18.0			16.3			20.4			9.0	
Approach LOS		B			B			C			A	
Queue Length 50th (ft)	48	4		11	2		107	6	0	44	31	
Queue Length 95th (ft)	96	42		33	26		#236	18	m0	m64	91	
Internal Link Dist (ft)		172			369			465			959	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	150			185			255		175	230		
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 28 (43%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.98
Intersection Signal Delay: 14.7 Intersection LOS: B
Intersection Capacity Utilization 66.0% ICU Level of Service B
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Wellness Way & Deer Valley Road

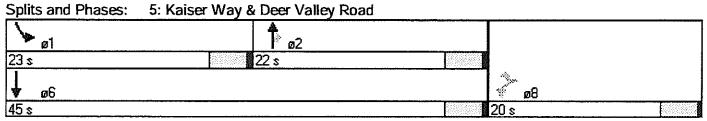


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	0	0	0	1770	0	1583	0	3539	1583	1770	3539	0
Flt Permitted				0.950						0.950		
Satd. Flow (perm)	0	0	0	1770	0	1583	0	3539	1583	1770	3539	0
Satd. Flow (RTOR)						109			138			
Volume (vph)	0	0	0	70	0	98	0	782	124	335	707	0
Lane Group Flow (vph)	0	0	0	78	0	109	0	869	138	372	786	0
Turn Type				custom		custom			Perm	Prot		
Protected Phases								2		1	6	
Permitted Phases				8		8			2			
Total Split (s)	0.0	0.0	0.0	20.0	0.0	20.0	0.0	22.0	22.0	23.0	45.0	0.0
Act Effct Green (s)				9.1		9.1		30.8	30.8	18.0	52.4	
Actuated g/C Ratio				0.14		0.14		0.47	0.47	0.28	0.81	
v/c Ratio				0.32		0.35		0.52	0.17	0.76	0.28	
Uniform Delay, d1				26.1		0.0		12.5	0.0	21.5	1.9	
Delay				24.6		6.1		14.1	3.1	14.6	6.7	
LOS				C		A		B	A	B	A	
Approach Delay					13.8			12.6			9.2	
Approach LOS					B			B			A	
Queue Length 50th (ft)				28		0		134	0	118	72	
Queue Length 95th (ft)				60		36		205	30	#247	222	
Internal Link Dist (ft)		197			305			523			465	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)						90			480	220		
50th Bay Block Time %												
95th Bay Block Time %										21%		
Queuing Penalty (veh)										41		

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 16 (25%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.76
Intersection Signal Delay: 11.0 Intersection LOS: B
Intersection Capacity Utilization 58.9% ICU Level of Service A
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: Kaiser Way & Deer Valley Road

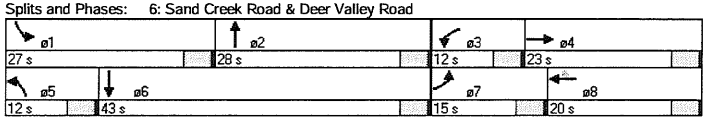


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	3366	0	1770	3539	1583	1770	3408	0	1770	3522	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3366	0	1770	3539	1583	1770	3408	0	1770	3522	0
Satd. Flow (RTOR)		83				121		50			5	
Volume (vph)	189	260	125	59	280	109	77	698	231	311	451	15
Lane Group Flow (vph)	210	428	0	66	311	121	86	1033	0	346	518	0
Turn Type	Prot			Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8						
Total Split (s)	15.0	23.0	0.0	12.0	20.0	20.0	12.0	28.0	0.0	27.0	43.0	0.0
Act Effct Green (s)	12.0	19.2		8.4	13.6	13.6	8.6	30.8		21.5	45.8	
Actuated g/C Ratio	0.13	0.21		0.09	0.15	0.15	0.10	0.34		0.24	0.51	
v/c Ratio	0.89	0.55		0.40	0.58	0.35	0.51	0.86		0.82	0.29	
Uniform Delay, d1	38.4	25.1		39.5	34.7	0.0	39.8	26.9		32.4	13.6	
Delay	64.3	25.8		34.9	34.6	14.3	39.1	44.4		34.2	13.9	
LOS	E	C		C	C	B	D	D		C	B	
Approach Delay		38.5			29.7			44.0			22.0	
Approach LOS		D			C			D			C	
Queue Length 50th (ft)	119	95		38	86	0	47	281		180	88	
Queue Length 95th (ft)	#247	137		80	123	61	94	#456		#299	134	
Internal Link Dist (ft)		412			943			602			523	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	250			150			70			510		
50th Bay Block Time %								51%				
95th Bay Block Time %	6%						28%	64%				
Queuing Penalty (veh)	6						72	49				

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.89
Intersection Signal Delay: 34.5 Intersection LOS: C
Intersection Capacity Utilization 82.4% ICU Level of Service D
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 6: Sand Creek Road & Deer Valley Road

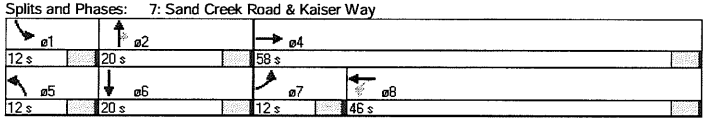


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	4826	0	3433	4897	0	3433	1770	1504	1770	1766	0
Flt Permitted	0.950			0.322			0.950			0.950		
Satd. Flow (perm)	1770	4826	0	1164	4897	0	3433	1770	1504	1770	1766	0
Satd. Flow (RTOR)		267			125				70		19	
Volume (vph)	41	502	259	325	382	123	60	69	63	25	32	17
Lane Group Flow (vph)	46	846	0	361	561	0	67	77	70	28	55	0
Turn Type	Prot			Perm			Prot		Perm	Prot		
Protected Phases	7	4			8		5	2		1	6	
Permitted Phases				8					2			
Total Split (s)	12.0	58.0	0.0	46.0	46.0	0.0	12.0	20.0	20.0	12.0	20.0	0.0
Act Effct Green (s)	8.2	65.6		58.5	58.5		8.0	13.6	13.6	7.6	9.3	
Actuated g/C Ratio	0.09	0.73		0.65	0.65		0.09	0.15	0.15	0.08	0.10	
v/c Ratio	0.29	0.24		0.48	0.17		0.22	0.29	0.24	0.19	0.28	
Uniform Delay, d1	40.4	3.1		10.1	6.0		39.1	33.9	0.0	41.6	23.3	
Delay	47.2	2.7		8.5	1.8		37.9	33.8	9.4	38.0	26.0	
LOS	D	A		A	A		D	C	A	D	C	
Approach Delay		5.0			4.5			27.1			30.0	
Approach LOS		A			A			C			C	
Queue Length 50th (ft)	28	29		82	45		18	37	0	15	19	
Queue Length 95th (ft)	m41	m41		134	2		38	85	38	41	52	
Internal Link Dist (ft)		943			2570			558			722	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	150			130			150		70	150		
50th Bay Block Time %												
95th Bay Block Time %				7%								
Queuing Penalty (veh)				6								

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBTL, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.48
Intersection Signal Delay: 8.0 Intersection LOS: A
Intersection Capacity Utilization 46.1% ICU Level of Service A
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Sand Creek Road & Kaiser Way

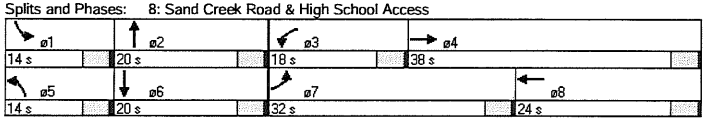


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	5024	0	1770	4887	0	1770	1613	0	1770	1609	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	5024	0	1770	4887	0	1770	1613	0	1770	1609	0
Satd. Flow (RTOR)		19			92			280			207	
Volume (vph)	346	340	31	137	542	190	99	31	252	104	19	186
Lane Group Flow (vph)	384	412	0	152	813	0	110	314	0	116	228	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Total Split (s)	32.0	38.0	0.0	18.0	24.0	0.0	14.0	20.0	0.0	14.0	20.0	0.0
Act Effct Green (s)	24.2	46.9		12.9	35.6		10.0	10.2		10.1	10.3	
Actuated g/C Ratio	0.27	0.52		0.14	0.40		0.11	0.11		0.11	0.11	
v/c Ratio	0.81	0.16		0.60	0.41		0.56	0.73		0.58	0.62	
Uniform Delay, d1	30.7	11.1		36.1	17.7		39.0	3.9		39.1	3.3	
Delay	27.4	16.2		34.8	26.4		37.9	6.8		38.1	7.0	
LOS	C	B		C	C		D	A		D	A	
Approach Delay		21.6			27.8			14.9			17.5	
Approach LOS		C			C			B			B	
Queue Length 50th (ft)	206	51		75	151		60	18		63	11	
Queue Length 95th (ft)	305	95		145	200		112	92		118	72	
Internal Link Dist (ft)		2570			1012			515			1044	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	300			150			150			150		
50th Bay Block Time %												
95th Bay Block Time %	7%				10%							
Queuing Penalty (veh)	5				8							

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.81
Intersection Signal Delay: 22.3 Intersection LOS: C
Intersection Capacity Utilization 76.5% ICU Level of Service C

Splits and Phases: 8: Sand Creek Road & High School Access

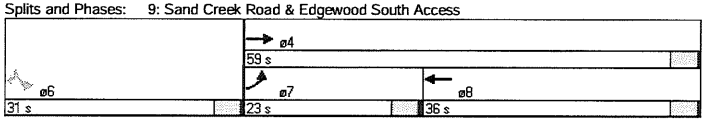


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	5085	0	0	5080	0	0	0	0	1770	0	1583
Flt Permitted	0.950									0.950		
Satd. Flow (perm)	1770	5085	0	0	5080	0	0	0	0	1770	0	1583
Satd. Flow (RTOR)					1							13
Volume (vph)	7	690	0	0	858	4	0	0	0	14	0	12
Lane Group Flow (vph)	8	767	0	0	957	0	0	0	0	16	0	13
Turn Type	Prot									custom		custom
Protected Phases	7	4			8							
Permitted Phases										6		6
Total Split (s)	23.0	59.0	0.0	0.0	36.0	0.0	0.0	0.0	0.0	31.0	0.0	31.0
Act Effct Green (s)	7.0	76.7			74.5					7.3		7.3
Actuated g/C Ratio	0.08	0.85			0.83					0.08		0.08
v/c Ratio	0.06	0.18			0.23					0.11		0.09
Uniform Delay, d1	42.8	1.2			2.4					38.3		0.0
Delay	38.6	0.6			2.8					38.1		19.0
LOS	D	A			A					D		B
Approach Delay		1.0			2.8						29.5	
Approach LOS		A			A						C	
Queue Length 50th (ft)	5	8			40					9		0
Queue Length 95th (ft)	m13	10			81					28		18
Internal Link Dist (ft)		1012			367			678			1094	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	150									200		
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.23
Intersection Signal Delay: 2.4 Intersection LOS: A
Intersection Capacity Utilization 28.5% ICU Level of Service A
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 9: Sand Creek Road & Edgewood South Access

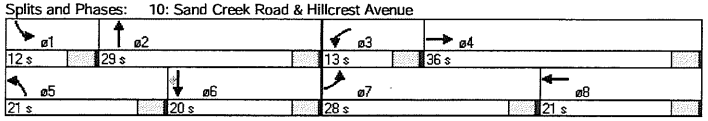


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	3433	4760	0	1770	5040	0	3433	3454	0	1770	3122	1441
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	4760	0	1770	5040	0	3433	3454	0	1770	3122	1441
Satd. Flow (RTOR)		148			9			24			226	246
Volume (vph)	393	177	133	83	148	9	290	688	130	4	183	425
Lane Group Flow (vph)	437	345	0	92	174	0	322	908	0	4	429	246
Turn Type	Prot			Prot			Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												6
Total Split (s)	28.0	36.0	0.0	13.0	21.0	0.0	21.0	29.0	0.0	12.0	20.0	20.0
Act Effct Green (s)	17.8	44.1		9.3	33.6		14.4	27.5		6.8	12.2	12.2
Actuated g/C Ratio	0.20	0.49		0.10	0.37		0.16	0.31		0.08	0.14	0.14
v/c Ratio	0.64	0.14		0.51	0.09		0.59	0.85		0.03	0.69	0.60
Uniform Delay, d1	33.2	8.2		39.3	19.3		35.0	28.5		42.8	15.7	0.0
Delay	33.6	8.1		38.4	20.2		34.7	30.9		29.5	22.7	15.1
LOS	C	A		D	C		C	C		C	C	B
Approach Delay		22.3			26.5			31.9			19.9	
Approach LOS		C			C			C			B	
Queue Length 50th (ft)	133	0		50	21		88	242		2	63	56
Queue Length 95th (ft)	162	0		99	47		124	#336		m8	152	152
Internal Link Dist (ft)		367			1265			116			1953	
50th Up Block Time (%)								37%				
95th Up Block Time (%)							10%	47%				
Turn Bay Length (ft)	300			220			200			150		250
50th Bay Block Time %								14%				
95th Bay Block Time %								30%				
Queuing Penalty (veh)								72				

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 58 (64%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.85
Intersection Signal Delay: 26.1 Intersection LOS: C
Intersection Capacity Utilization 58.3% ICU Level of Service A
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 10: Sand Creek Road & Hillcrest Avenue

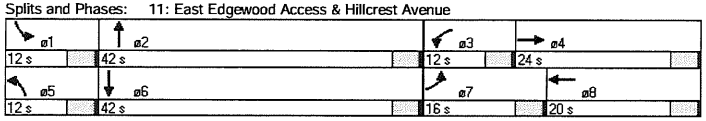


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	1583	0	1770	1583	0	1770	3454	0	1770	3518	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	1583	0	1770	1583	0	1770	3454	0	1770	3518	0
Satd. Flow (RTOR)		375			302			30			6	
Volume (vph)	41	0	2	30	0	108	6	917	171	204	582	25
Lane Group Flow (vph)	46	2	0	33	120	0	7	1209	0	227	675	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Total Split (s)	16.0	24.0	0.0	12.0	20.0	0.0	12.0	42.0	0.0	12.0	42.0	0.0
Act Effct Green (s)	8.7	6.9		12.0	6.5		6.9	59.7		9.0	70.1	
Actuated g/C Ratio	0.10	0.08		0.13	0.07		0.08	0.66		0.10	0.78	
v/c Ratio	0.27	0.00		0.14	0.30		0.05	0.53		1.28	0.25	
Uniform Delay, d1	39.9	0.0		36.5	0.0		42.9	9.8		40.5	5.2	
Delay	37.1	0.0		33.8	0.0		35.7	19.9		154.9	6.4	
LOS	D	A		C	A		D	B		F	A	
Approach Delay		35.6			7.3			20.0			43.8	
Approach LOS		D			A			C			D	
Queue Length 50th (ft)	25	0		15	0		4	390		~170	49	
Queue Length 95th (ft)	56	0		46	0		m4	455		#319	152	
Internal Link Dist (ft)		296			524			1953			777	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	200			150			150			150		
50th Bay Block Time %								29%		22%		
95th Bay Block Time %								27%		53%	1%	
Queuing Penalty (veh)								2		126		

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 16 (18%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.28
Intersection Signal Delay: 28.8 Intersection LOS: C
Intersection Capacity Utilization 64.2% ICU Level of Service B
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 11: East Edgewood Access & Hillcrest Avenue

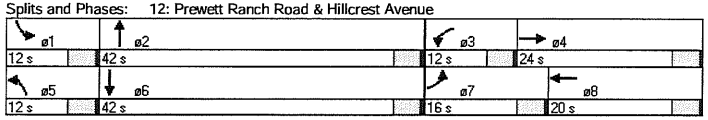


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	1682	0	1770	1833	0	1770	3504	0	1770	3468	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	1682	0	1770	1833	0	1770	3504	0	1770	3468	0
Satd. Flow (RTOR)		94			6			10			24	
Volume (vph)	147	47	85	42	47	5	50	1079	78	14	709	109
Lane Group Flow (vph)	163	146	0	47	58	0	56	1286	0	16	909	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Total Split (s)	16.0	24.0	0.0	12.0	20.0	0.0	12.0	42.0	0.0	12.0	42.0	0.0
Act Effct Green (s)	12.2	12.9		8.1	8.8		8.3	61.5		7.2	54.5	
Actuated g/C Ratio	0.14	0.14		0.09	0.10		0.09	0.68		0.08	0.61	
v/c Ratio	0.68	0.45		0.30	0.31		0.34	0.54		0.11	0.43	
Uniform Delay, d1	37.0	12.2		40.4	35.7		39.3	9.6		42.8	10.5	
Delay	39.0	14.2		38.3	34.0		53.5	3.5		38.1	11.5	
LOS	D	B		D	C		D	A		D	B	
Approach Delay		27.3			35.9			5.6			12.0	
Approach LOS		C			D			A			B	
Queue Length 50th (ft)	89	27		25	28		34	43		9	161	
Queue Length 95th (ft)	#165	79		59	63		m67	69		28	227	
Internal Link Dist (ft)		241			477			777			954	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	100			120			85			115		
50th Bay Block Time %											17%	
95th Bay Block Time %	37%							5%			27%	
Queuing Penalty (veh)	27							1			3	

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 28 (31%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.68
Intersection Signal Delay: 11.5 Intersection LOS: B
Intersection Capacity Utilization 58.3% ICU Level of Service A
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 12: Prewett Ranch Road & Hillcrest Avenue

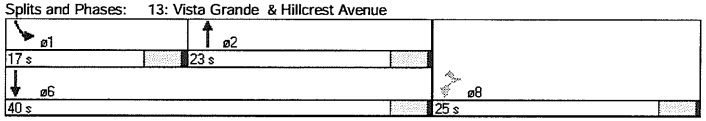


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	0	0	0	1770	0	1583	0	3511	0	1770	3539	0
Flt Permitted				0.950						0.950		
Satd. Flow (perm)	0	0	0	1770	0	1583	0	3511	0	1770	3539	0
Satd. Flow (RTOR)						102		9				
Volume (vph)	0	0	0	77	0	92	0	1244	67	67	792	0
Lane Group Flow (vph)	0	0	0	86	0	102	0	1456	0	74	880	0
Turn Type				custom		custom				Prot		
Protected Phases								2		1	6	
Permitted Phases				8		8						
Total Split (s)	0.0	0.0	0.0	25.0	0.0	25.0	0.0	23.0	0.0	17.0	40.0	0.0
Act Effct Green (s)				9.2		9.2		44.4		8.9	52.3	
Actuated g/C Ratio				0.14		0.14		0.68		0.14	0.80	
v/c Ratio				0.34		0.33		0.61		0.31	0.31	
Uniform Delay, d1				26.2		0.0		7.2		27.5	2.0	
Delay				24.6		6.1		10.2		20.0	4.4	
LOS				C		A		B		B	A	
Approach Delay					14.6			10.2			5.6	
Approach LOS					B			B			A	
Queue Length 50th (ft)				31		0		188		29	125	
Queue Length 95th (ft)				65		35		331		m38	m158	
Internal Link Dist (ft)		216			502			954			614	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)				100						195		
50th Bay Block Time %												
95th Bay Block Time %											2%	
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 16 (25%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.61
Intersection Signal Delay: 8.9 Intersection LOS: A
Intersection Capacity Utilization 59.4% ICU Level of Service A
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 13: Vista Grande & Hillcrest Avenue

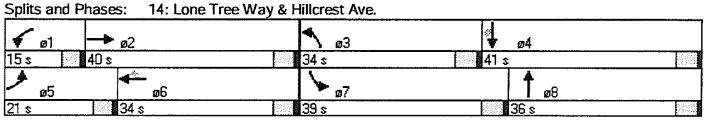


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	4788	0	1770	5085	1583	1770	3155	0	*1900	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	4788	0	1769	5085	1583	1770	3155	0	3431	3539	1583
Satd. Flow (RTOR)		107				483		171				380
Volume (vph)	219	915	507	109	1098	572	111	389	745	810	216	331
Lane Group Flow (vph)	258	1672	0	117	1181	615	150	1533	0	931	248	380
Turn Type	Prot			Prot		Perm	Prot			Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases						6						4
Total Split (s)	21.0	40.0	0.0	15.0	34.0	34.0	34.0	36.0	0.0	39.0	41.0	41.0
Act Effct Green (s)	17.9	37.3		11.7	30.9	30.9	16.6	33.0		36.0	52.4	52.4
Actuated g/C Ratio	0.14	0.29		0.09	0.24	0.24	0.13	0.25		0.28	0.40	0.40
v/c Ratio	1.05	1.15		0.74	0.97	0.83	0.66	1.93dr		1.77	0.17	0.44
Uniform Delay, d1	56.0	42.9		57.6	49.1	9.2	54.0	39.5		47.0	24.9	0.0
Delay	58.5	68.5		71.2	47.1	14.4	49.1	230.7		250.7	25.8	2.8
LOS	E	E		E	D	B	D	F		F	C	A
Approach Delay		67.2			38.1			214.5			154.5	
Approach LOS		E			D			F			F	
Queue Length 50th (ft)	~237	~576		90	355	246	108	~906		~602	70	0
Queue Length 95th (ft)	m166	m297		#185	#455	#463	129	#777		#701	103	56
Internal Link Dist (ft)		945			1420			712			1758	
50th Up Block Time (%)								37%				
95th Up Block Time (%)								12%				
Turn Bay Length (ft)	350			210		210	195			855		
50th Bay Block Time %		25%			18%	7%		85%				
95th Bay Block Time %					22%	12%		79%				
Queuing Penalty (veh)		32			23	37		495				

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 78 (60%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.77
Intersection Signal Delay: 113.5 Intersection LOS: F
Intersection Capacity Utilization 127.9% ICU Level of Service H
* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.
dr Defacto Right Lane. Recode with 1 though lane as a right lane.

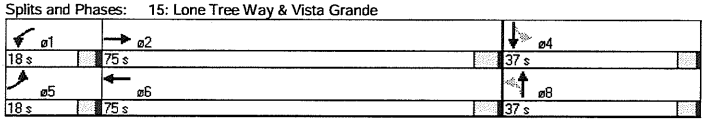
Splits and Phases: 14: Lone Tree Way & Hillcrest Ave.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	5062	0	1770	5070	0	1770	1654	0	1770	1684	0
Flt Permitted	0.950			0.950			0.615			0.517		
Satd. Flow (perm)	1770	5062	0	1769	5070	0	1146	1654	0	963	1684	0
Satd. Flow (RTOR)		5			4			110			66	
Volume (vph)	109	2029	61	51	1724	39	89	38	111	54	29	51
Lane Group Flow (vph)	121	2322	0	55	1896	0	101	169	0	76	113	0
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		
Total Split (s)	18.0	75.0	0.0	18.0	75.0	0.0	37.0	37.0	0.0	37.0	37.0	0.0
Act Effct Green (s)	13.7	94.6		10.9	89.8		17.6	17.6		17.6	17.6	
Actuated g/C Ratio	0.11	0.73		0.08	0.69		0.14	0.14		0.14	0.14	
v/c Ratio	0.65	0.63		0.37	0.54		0.65	0.53		0.58	0.40	
Uniform Delay, d1	55.8	9.3		57.4	9.9		53.3	17.6		52.7	20.8	
Delay	57.5	10.3		47.8	8.7		52.2	18.6		51.5	21.9	
LOS	E	B		D	A		D	B		D	C	
Approach Delay		12.7			9.8			31.2			33.8	
Approach LOS		B			A			C			C	
Queue Length 50th (ft)	95	354		47	137		82	45		61	36	
Queue Length 95th (ft)	m63	m264		m63	226		132	106		83	58	
Internal Link Dist (ft)		1420			1055			786			614	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	200			200			130			100		
50th Bay Block Time %		13%										
95th Bay Block Time %		9%			16%		6%					
Queuing Penalty (veh)		13			4		5					

Intersection Summary
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 55 (42%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.65
Intersection Signal Delay: 13.4 Intersection LOS: B
Intersection Capacity Utilization 76.0% ICU Level of Service C
m Volume for 95th percentile queue is metered by upstream signal.

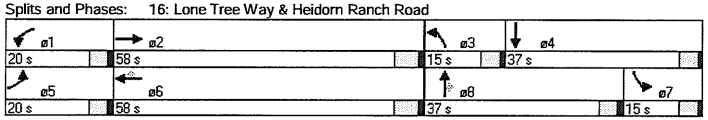
Splits and Phases: 15: Lone Tree Way & Vista Grande



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	5034	0	1770	4806	1362	3433	1863	1583	1770	1820	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	5034	0	1770	4806	1362	3433	1863	1583	1770	1820	0
Satd. Flow (RTOR)		11				7			285		2	
Volume (vph)	8	2559	184	251	1995	25	107	19	357	25	5	1
Lane Group Flow (vph)	8	2799	0	285	2267	28	214	38	714	53	13	0
Turn Type	Prot			Prot		Perm	Prot		Perm	Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases						6			8			
Total Split (s)	20.0	58.0	0.0	20.0	58.0	58.0	15.0	37.0	37.0	15.0	37.0	0.0
Act Effct Green (s)	7.7	58.4		17.0	76.0	76.0	38.2	34.1	34.1	10.8	12.9	
Actuated g/C Ratio	0.06	0.45		0.13	0.58	0.58	0.29	0.26	0.26	0.08	0.10	
v/c Ratio	0.08	1.23		1.23	0.81	0.04	0.21	0.08	1.14	0.36	0.07	
Uniform Delay, d1	62.2	37.4		56.5	27.3	11.0	34.6	36.2	26.1	55.0	48.7	
Delay	76.9	123.9		156.7	9.4	1.0	37.0	35.3	93.5	56.2	41.8	
LOS	E	F		F	A	A	D	D	F	E	D	
Approach Delay		123.8			25.6			78.7			53.4	
Approach LOS		F			C			E			D	
Queue Length 50th (ft)	6	~1108		~289	56	1	56	22	~520	43	9	
Queue Length 95th (ft)	m14	#1192		m#424	#594	m0	69	28	113	44	12	
Internal Link Dist (ft)		1055			905			972			316	
50th Up Block Time (%)												
95th Up Block Time (%)		7%										
Turn Bay Length (ft)	185			400		95	200		200	50		
50th Bay Block Time %		65%							55%			
95th Bay Block Time %		66%		9%	6%							
Queuing Penalty (veh)		97		33	8				69			

Intersection Summary
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 55 (42%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.23
Intersection Signal Delay: 76.8 Intersection LOS: E
Intersection Capacity Utilization 112.2% ICU Level of Service G
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 16: Lone Tree Way & Heidorn Ranch Road



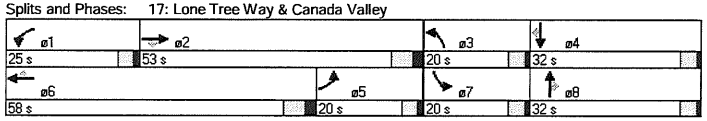
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	5085	1583	3433	5085	1583	3433	1612	1504	1770	1863	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	5085	1583	3433	5085	1583	3433	1612	1504	1770	1863	1583
Satd. Flow (RTOR)			112			293		51	150			172
Volume (vph)	90	2825	109	492	2039	304	43	41	162	499	65	155
Lane Group Flow (vph)	93	2912	112	535	2216	330	62	144	150	554	72	172
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Total Split (s)	20.0	53.0	53.0	25.0	58.0	58.0	20.0	32.0	32.0	20.0	32.0	32.0
Act Effct Green (s)	17.0	66.5	66.5	21.9	71.3	71.3	7.7	12.7	12.7	17.0	23.7	23.7
Actuated g/C Ratio	0.13	0.51	0.51	0.17	0.55	0.55	0.06	0.10	0.10	0.13	0.18	0.18
v/c Ratio	0.40	1.12	0.13	0.93	0.79	0.33	0.31	0.71	0.53	2.40	0.21	0.40
Uniform Delay, d1	51.8	32.2	0.0	53.2	24.0	1.6	59.5	35.9	0.0	56.5	45.2	0.0
Delay	40.5	54.6	3.1	78.5	21.2	4.5	58.2	35.5	7.9	320.7	45.4	6.3
LOS	D	D	A	E	C	A	E	D	A	F	D	A
Approach Delay		52.3			29.4			27.8			228.1	
Approach LOS		D			C			C			F	
Queue Length 50th (ft)	62	~1011	5	247	299	24	26	81	0	~767	53	0
Queue Length 95th (ft)	m50	m#515	m3	m#315	543	m60	37	100	21	#991	95	61
Internal Link Dist (ft)		905			760			542			1064	
50th Up Block Time (%)		6%										
95th Up Block Time (%)												
Turn Bay Length (ft)	320		630	400		350	150			170		170
50th Bay Block Time %		44%								76%		
95th Bay Block Time %		6%			8%					81%		
Queuing Penalty (veh)		103			21					191		

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 37 (28%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 2.40
Intersection Signal Delay: 60.6 Intersection LOS: E
Intersection Capacity Utilization 123.5% ICU Level of Service H

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 17: Lone Tree Way & Canada Valley

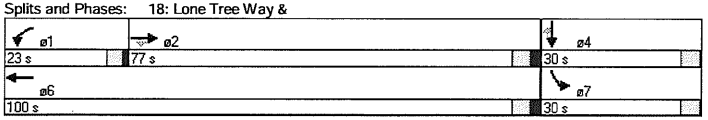


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	0	5085	1583	3433	5085	0	0	0	0	1681	1681	1583
Flt Permitted				0.950						0.950	0.950	
Satd. Flow (perm)	0	5085	1583	3433	5085	0	0	0	0	1681	1681	1583
Satd. Flow (RTOR)			657									3
Volume (vph)	0	2344	886	286	2750	0	0	0	0	342	0	123
Lane Group Flow (vph)	0	2726	1030	329	3161	0	0	0	0	190	190	137
Turn Type			Perm	Prot						Prot		Perm
Protected Phases		2		1	6					7	4	
Permitted Phases			2									4
Total Split (s)	0.0	77.0	77.0	23.0	100.0	0.0	0.0	0.0	0.0	30.0	30.0	30.0
Act Effct Green (s)		76.4	76.4	17.6	97.0					27.0	27.0	27.0
Actuated g/C Ratio		0.59	0.59	0.14	0.75					0.21	0.21	0.21
v/c Ratio		0.91	0.86	0.71	0.83					0.54	0.54	0.41
Uniform Delay, d1		23.8	6.7	53.7	11.1					46.0	46.0	43.6
Delay		11.2	7.6	57.5	8.0					46.7	46.7	44.3
LOS		B	A	E	A					D	D	D
Approach Delay		10.2			12.6						46.1	
Approach LOS		B			B						D	
Queue Length 50th (ft)		172	68	128	590					151	151	99
Queue Length 95th (ft)		m150	m35	m118	m208					235	235	164
Internal Link Dist (ft)		760			760			536			445	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)				310						280		
50th Bay Block Time %					8%							
95th Bay Block Time %					2%							
Queuing Penalty (veh)					12							

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 72 (55%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.91
Intersection Signal Delay: 13.7 Intersection LOS: B
Intersection Capacity Utilization 93.7% ICU Level of Service E
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 18: Lone Tree Way &



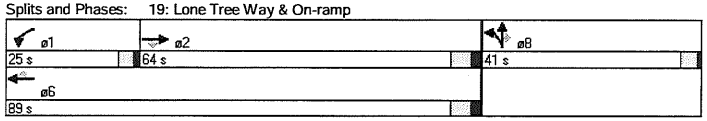
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱	↰	↑↑↑	↱	↰	↑	↱			
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	0	5085	1583	1770	5085	1583	1681	1681	1583	0	0	0
Flt Permitted				0.950			0.950	0.950				
Satd. Flow (perm)	0	5085	1583	1770	5085	1583	1681	1681	1583	0	0	0
Satd. Flow (RTOR)			194			495			290			
Volume (vph)	0	2381	305	137	2186	441	850	0	718	0	0	0
Lane Group Flow (vph)	0	2801	359	156	2484	501	966	966	1632	0	0	0
Turn Type			Perm	Prot		Perm	Split		Perm			
Protected Phases		2		1	6		8	8				
Permitted Phases			2			6			8			
Total Split (s)	0.0	64.0	64.0	25.0	89.0	89.0	41.0	41.0	41.0	0.0	0.0	0.0
Act Effct Green (s)		66.7	66.7	16.3	86.1	86.1	38.0	38.0	38.0			
Actuated g/C Ratio		0.51	0.51	0.13	0.66	0.66	0.29	0.29	0.29			
v/c Ratio		1.07	0.40	0.70	0.74	0.41	1.97	1.97	2.44			
Uniform Delay, d1		31.7	8.0	54.5	14.6	0.1	46.0	46.0	26.0			
Delay		63.0	2.0	53.8	14.8	0.8	277.3	277.3	321.7			
LOS		E	A	D	B	A	F	F	F			
Approach Delay		56.1			14.5			297.6				
Approach LOS		E			B			F				
Queue Length 50th (ft)		~985	26	128	469	2	~1327	~1327	~2114			
Queue Length 95th (ft)		#1038	m43	189	500	33	#548	#548	#762			
Internal Link Dist (ft)		760			620			935			1156	
50th Up Block Time (%)		15%					30%	30%	63%			
95th Up Block Time (%)		19%										
Turn Bay Length (ft)			240	280		250	1000					
50th Bay Block Time %		20%			15%		25%	25%				
95th Bay Block Time %		27%			16%							
Queuing Penalty (veh)		554			24		119	119				

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 88 (68%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 2.44
Intersection Signal Delay: 130.1 Intersection LOS: F
Intersection Capacity Utilization 161.8% ICU Level of Service H

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 19: Lone Tree Way & On-ramp



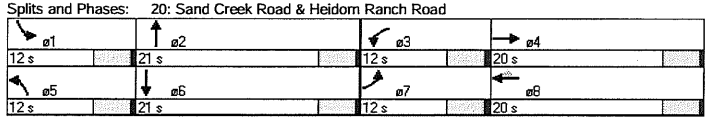
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑		↰	↑↑	↱	↰	↑		↰	↑	
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	3529	0	1770	3539	1583	1770	1850	0	1770	1749	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3529	0	1770	3539	1583	1770	1850	0	1770	1749	0
Satd. Flow (RTOR)		3				190		4			33	
Volume (vph)	88	231	5	11	228	171	5	217	11	50	43	30
Lane Group Flow (vph)	98	263	0	12	253	190	6	253	0	56	81	0
Turn Type	Prot			Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8						
Total Split (s)	12.0	20.0	0.0	12.0	20.0	20.0	12.0	21.0	0.0	12.0	21.0	0.0
Act Effct Green (s)	8.4	18.3		7.0	11.0	11.0	6.7	31.5		8.0	36.5	
Actuated g/C Ratio	0.13	0.28		0.11	0.17	0.17	0.10	0.48		0.12	0.56	
v/c Ratio	0.43	0.26		0.06	0.42	0.45	0.03	0.28		0.26	0.08	
Uniform Delay, d1	27.1	17.9		30.3	22.0	0.0	30.3	12.9		27.9	5.7	
Delay	26.3	17.4		23.3	16.7	6.0	26.2	14.1		26.8	4.1	
LOS	C	B		C	B	A	C	B		C	A	
Approach Delay		19.8			12.4			14.4			13.4	
Approach LOS		B			B			B			B	
Queue Length 50th (ft)	36	37		3	48	0	2	68		35	7	
Queue Length 95th (ft)	77	73		m15	72	60	12	139		m23	m12	
Internal Link Dist (ft)		1326			601			734			1270	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	150			150		150	150			150		
50th Bay Block Time %												
95th Bay Block Time %								4%				
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 16 (25%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.45
Intersection Signal Delay: 15.2 Intersection LOS: B
Intersection Capacity Utilization 40.6% ICU Level of Service A

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 20: Sand Creek Road & Heidorn Ranch Road



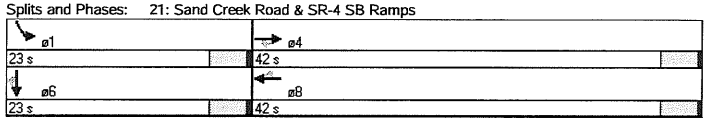
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	0	3539	1583	0	3539	1583	0	0	0	1681	1610	1504
Flt Permitted										0.950	0.950	
Satd. Flow (perm)	0	3539	1583	0	3539	1583	0	0	0	1681	1610	1504
Satd. Flow (RTOR)			283			306						100
Volume (vph)	0	418	255	0	508	275	0	0	0	910	0	90
Lane Group Flow (vph)	0	464	283	0	564	306	0	0	0	506	505	100
Turn Type			Perm			Perm				Prot		Perm
Protected Phases		4			8					1	6	
Permitted Phases			4			8						6
Total Split (s)	0.0	42.0	42.0	0.0	42.0	42.0	0.0	0.0	0.0	23.0	23.0	23.0
Act Effct Green (s)		39.0	39.0		39.0	39.0				20.0	20.0	20.0
Actuated g/C Ratio		0.60	0.60		0.60	0.60				0.31	0.31	0.31
v/c Ratio		0.22	0.27		0.27	0.29				0.98	1.02	0.19
Uniform Delay, d1		6.0	0.0		6.2	0.0				22.3	22.5	0.0
Delay		6.4	2.0		4.3	0.3				50.2	60.1	4.4
LOS		A	A		A	A				D	E	A
Approach Delay		4.8			2.9						50.6	
Approach LOS		A			A						D	
Queue Length 50th (ft)		55	0		31	0				206	~225	0
Queue Length 95th (ft)		27	0		42	0				#396	#423	30
Internal Link Dist (ft)		1483			767			374			330	
50th Up Block Time (%)												
95th Up Block Time (%)										21%	23%	
Turn Bay Length (ft)			100							325		225
50th Bay Block Time %												
95th Bay Block Time %										22%	24%	
Queuing Penalty (veh)										66	60	

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 58 (89%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.02
Intersection Signal Delay: 22.8 Intersection LOS: C
Intersection Capacity Utilization 53.2% ICU Level of Service A

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 21: Sand Creek Road & SR-4 SB Ramps



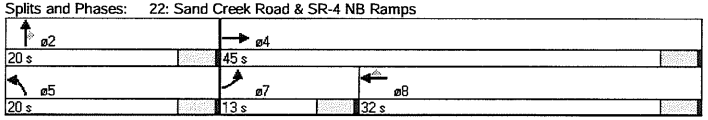
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	3433	3539	0	0	3539	1583	1681	1441	1504	0	0	0
Flt Permitted	0.950						0.950					
Satd. Flow (perm)	3433	3539	0	0	3539	1583	1681	1441	1504	0	0	0
Satd. Flow (RTOR)						712		116	116			
Volume (vph)	343	985	0	0	534	723	14	0	293	0	0	0
Lane Group Flow (vph)	381	1094	0	0	593	803	16	163	163	0	0	0
Turn Type	Prot					Perm	Prot		Perm			
Protected Phases	7	4			8		5	2				
Permitted Phases						8			2			
Total Split (s)	13.0	45.0	0.0	0.0	32.0	32.0	20.0	20.0	20.0	0.0	0.0	0.0
Act Effct Green (s)	10.0	49.8			36.8	36.8	9.3	9.3	9.3			
Actuated g/C Ratio	0.15	0.77			0.57	0.57	0.14	0.14	0.14			
v/c Ratio	0.72	0.40			0.30	0.67	0.07	0.53	0.52			
Uniform Delay, d1	26.1	2.6			7.4	0.8	24.1	7.1	7.1			
Delay	37.3	0.6			8.0	1.9	22.0	9.1	9.1			
LOS	D	A			A	A	C	A	A			
Approach Delay		10.1			4.5			9.7				
Approach LOS		B			A			A				
Queue Length 50th (ft)	87	16			56	14	6	18	17			
Queue Length 95th (ft)	m95	m21			102	91	20	67	63			
Internal Link Dist (ft)		767			541			321			323	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	100					350	200		225			
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 49 (75%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.72
Intersection Signal Delay: 7.6 Intersection LOS: A
Intersection Capacity Utilization 74.4% ICU Level of Service C

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 22: Sand Creek Road & SR-4 NB Ramps

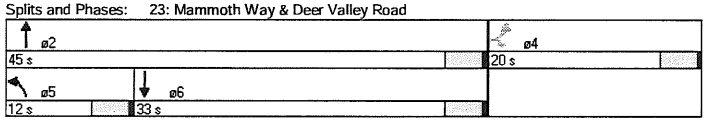


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	0	1583	0	0	0	1770	3539	0	0	3529	0
Flt Permitted	0.950						0.950					
Satd. Flow (perm)	1770	0	1583	0	0	0	1770	3539	0	0	3529	0
Satd. Flow (RTOR)			44								4	
Volume (vph)	85	0	40	0	0	0	20	689	0	0	976	22
Lane Group Flow (vph)	94	0	44	0	0	0	22	766	0	0	1108	0
Turn Type	custom		custom				Prot					
Protected Phases							5	2			6	
Permitted Phases	4		4									
Total Split (s)	20.0	0.0	20.0	0.0	0.0	0.0	12.0	45.0	0.0	0.0	33.0	0.0
Act Effct Green (s)	17.0		17.0				9.0	42.0			30.0	
Actuated g/C Ratio	0.26		0.26				0.14	0.65			0.46	
v/c Ratio	0.20		0.10				0.09	0.33			0.68	
Uniform Delay, d1	18.7		0.0				24.4	5.2			13.7	
Delay	19.2		6.8				15.1	7.9			24.8	
LOS	B		A				B	A			C	
Approach Delay		15.3						8.1			24.8	
Approach LOS		B						A			C	
Queue Length 50th (ft)	29		0				7	120			263	
Queue Length 95th (ft)	63		21				m16	164			295	
Internal Link Dist (ft)		286			282			959			970	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)												
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 65
Offset: 16 (25%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Control Type: Pretimed
Maximum v/c Ratio: 0.68
Intersection Signal Delay: 17.7 Intersection LOS: B
Intersection Capacity Utilization 42.7% ICU Level of Service A
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 23: Mammoth Way & Deer Valley Road

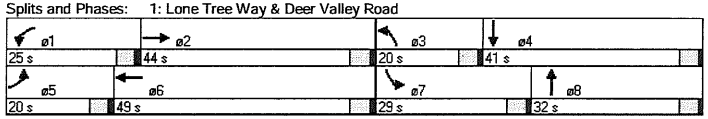


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	4938	0	1770	4933	0	3433	3383	0	*2000	3504	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	4938	0	1770	4933	0	3433	3383	0	1770	3504	0
Satd. Flow (RTOR)		44			52			44			5	
Volume (vph)	124	1325	311	185	1209	305	373	364	150	320	355	24
Lane Group Flow (vph)	146	1925	0	228	1870	0	434	597	0	492	583	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Total Split (s)	20.0	44.0	0.0	25.0	49.0	0.0	20.0	32.0	0.0	29.0	41.0	0.0
Act Effct Green (s)	15.5	45.2		20.5	50.3		17.0	26.3		26.0	35.3	
Actuated g/C Ratio	0.12	0.35		0.16	0.39		0.13	0.20		0.20	0.27	
v/c Ratio	0.70	1.10		0.81	0.96		0.97	0.83		1.23	0.61	
Uniform Delay, d1	54.9	41.3		52.9	37.9		56.2	45.9		52.0	41.0	
Delay	55.0	99.6		33.6	53.6		79.5	43.7		141.2	40.8	
LOS	E	F		C	D		E	D		F	D	
Approach Delay		96.5			51.4			58.8			86.8	
Approach LOS		F			D			E			F	
Queue Length 50th (ft)	118	~705		184	~620		199	225		~511	220	
Queue Length 95th (ft)	180	#741		m176	m553		#281	220		#429	187	
Internal Link Dist (ft)		900			1588			664			709	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	195			195			180			150		
50th Bay Block Time %		53%			43%		13%	8%		60%	24%	
95th Bay Block Time %		55%			41%		26%	33%		54%	15%	
Queuing Penalty (veh)		79			95		58	90		166	95	

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 80 (62%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.23
Intersection Signal Delay: 73.5 Intersection LOS: E
Intersection Capacity Utilization 108.8% ICU Level of Service F
* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Lone Tree Way & Deer Valley Road

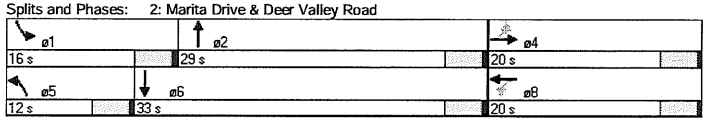


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	1583	0	1770	1591	0	1770	3536	0	1770	3525	0
Flt Permitted	0.619			0.752			0.950			0.950		
Satd. Flow (perm)	1153	1583	0	1401	1591	0	1770	3536	0	1770	3525	0
Satd. Flow (RTOR)		328			140			1			5	
Volume (vph)	15	0	8	42	4	126	15	796	5	32	799	21
Lane Group Flow (vph)	17	9	0	47	144	0	17	890	0	36	911	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Total Split (s)	20.0	20.0	0.0	20.0	20.0	0.0	12.0	29.0	0.0	16.0	33.0	0.0
Act Effct Green (s)	8.6	8.6		8.6	8.6		7.2	48.1		7.8	50.6	
Actuated g/C Ratio	0.13	0.13		0.13	0.13		0.11	0.74		0.12	0.78	
v/c Ratio	0.11	0.02		0.25	0.43		0.09	0.34		0.17	0.33	
Uniform Delay, d1	25.8	0.0		26.3	0.7		30.4	4.4		29.0	3.7	
Delay	23.9	0.0		24.7	5.8		37.7	1.4		26.0	2.3	
LOS	C	A		C	A		D	A		C	A	
Approach Delay		15.6			10.5			2.0			3.2	
Approach LOS		B			B			A			A	
Queue Length 50th (ft)	6	0		17	1		7	3		15	36	
Queue Length 95th (ft)	21	0		43	44		m15	10		m21	m77	
Internal Link Dist (ft)		346			300			2263			664	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	40			100			175			125		
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 16 (25%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.43
Intersection Signal Delay: 3.5 Intersection LOS: A
Intersection Capacity Utilization 40.8% ICU Level of Service A
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Marita Drive & Deer Valley Road

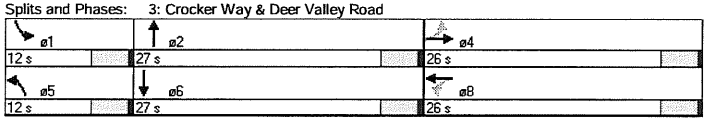


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	1676	0	1770	1788	0	1770	3440	0	1770	3479	0
Flt Permitted	0.638			0.470			0.950			0.950		
Satd. Flow (perm)	1188	1676	0	875	1788	0	1770	3440	0	1770	3479	0
Satd. Flow (RTOR)		170			31			49			23	
Volume (vph)	26	84	166	78	99	36	275	730	169	146	749	93
Lane Group Flow (vph)	29	277	0	87	150	0	306	999	0	162	935	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Total Split (s)	26.0	26.0	0.0	26.0	26.0	0.0	12.0	27.0	0.0	12.0	27.0	0.0
Act Effct Green (s)	12.3	12.3		12.3	12.3		9.0	34.8		8.8	34.7	
Actuated g/C Ratio	0.19	0.19		0.19	0.19		0.14	0.54		0.14	0.53	
v/c Ratio	0.13	0.61		0.52	0.41		1.25	0.54		0.67	0.50	
Uniform Delay, d1	21.9	8.9		23.7	18.2		28.0	9.3		26.6	9.3	
Delay	19.6	9.1		22.4	16.9		126.2	7.9		37.5	10.0	
LOS	B	A		C	B		F	A		D	A	
Approach Delay		10.1			18.9			35.7			14.1	
Approach LOS		B			B			D			B	
Queue Length 50th (ft)	10	37		32	42		~164	80		92	117	
Queue Length 95th (ft)	26	90		64	78		#311	111		125	225	
Internal Link Dist (ft)		416			350			970			2263	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	155			80			140			140		
50th Bay Block Time %							27%				2%	
95th Bay Block Time %					7%		74%				16%	
Queuing Penalty (veh)					3		253				13	

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 16 (25%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.25
Intersection Signal Delay: 23.6 Intersection LOS: C
Intersection Capacity Utilization 77.6% ICU Level of Service C
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Crocker Way & Deer Valley Road

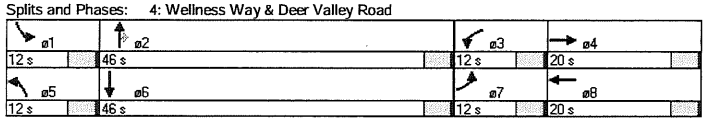


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	1587	0	1770	1606	0	1770	3539	1583	1770	3525	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	1587	0	1770	1606	0	1770	3539	1583	1770	3525	0
Satd. Flow (RTOR)		264			82				32		4	
Volume (vph)	30	3	254	56	6	74	239	1108	31	45	915	26
Lane Group Flow (vph)	33	285	0	62	89	0	266	1231	34	50	1046	0
Turn Type	Prot			Prot			Prot		Perm	Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			
Total Split (s)	12.0	20.0	0.0	12.0	20.0	0.0	12.0	46.0	46.0	12.0	46.0	0.0
Act Effct Green (s)	7.9	9.8		8.3	12.2		9.0	57.6	57.6	8.1	52.8	
Actuated g/C Ratio	0.09	0.11		0.09	0.14		0.10	0.64	0.64	0.09	0.59	
v/c Ratio	0.21	0.70		0.38	0.31		1.50	0.54	0.03	0.31	0.51	
Uniform Delay, d1	40.3	2.6		39.5	2.7		40.5	10.8	0.4	40.5	11.8	
Delay	38.0	6.3		38.5	9.4		208.0	5.4	0.4	38.3	12.5	
LOS	D	A		D	A		F	A	A	D	B	
Approach Delay		9.6			21.4			40.5			13.7	
Approach LOS		A			C			D			B	
Queue Length 50th (ft)	18	11		33	4		~214	142	0	27	172	
Queue Length 95th (ft)	46	81		73	42		#371	278	m0	62	285	
Internal Link Dist (ft)		172			369			465			950	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	150			185			255		175	230		
50th Bay Block Time %												
95th Bay Block Time %							76%	7%			14%	
Queuing Penalty (veh)							233	9			3	

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 28 (31%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.50
Intersection Signal Delay: 26.9 Intersection LOS: C
Intersection Capacity Utilization 78.2% ICU Level of Service C
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Wellness Way & Deer Valley Road

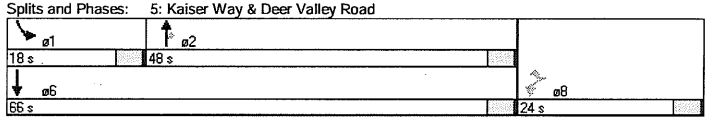


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	0	0	0	1770	0	1583	0	3539	1583	1770	3539	0
Flt Permitted				0.950						0.950		
Satd. Flow (perm)	0	0	0	1770	0	1583	0	3539	1583	1770	3539	0
Satd. Flow (RTOR)						295			36			
Volume (vph)	0	0	0	94	0	283	0	1095	32	116	1109	0
Lane Group Flow (vph)	0	0	0	104	0	314	0	1217	36	129	1232	0
Turn Type				custom		custom			Perm	Prot		
Protected Phases								2		1	6	
Permitted Phases				8		8			2			
Total Split (s)	0.0	0.0	0.0	24.0	0.0	24.0	0.0	48.0	48.0	18.0	66.0	0.0
Act Effct Green (s)				11.9		11.9		56.8	56.8	12.3	72.1	
Actuated g/C Ratio				0.13		0.13		0.63	0.63	0.14	0.80	
v/c Ratio				0.45		0.68		0.54	0.04	0.54	0.43	
Uniform Delay, d1				36.0		2.1		9.3	0.0	36.2	2.7	
Delay				35.0		5.6		15.5	9.0	32.2	3.6	
LOS				C		A		B	A	C	A	
Approach Delay					12.9			15.3			6.4	
Approach LOS					B			B			A	
Queue Length 50th (ft)				56		10		222	0	70	71	
Queue Length 95th (ft)				97		81		309	m6	132	195	
Internal Link Dist (ft)		197			305			523			465	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)						90			480	220		
50th Bay Block Time %												
95th Bay Block Time %				12%		4%						
Queuing Penalty (veh)				18		2						

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 16 (18%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.68
Intersection Signal Delay: 11.0 Intersection LOS: B
Intersection Capacity Utilization 59.8% ICU Level of Service A
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Kaiser Way & Deer Valley Road

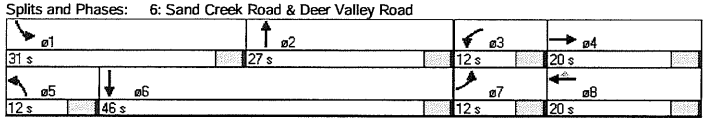


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	3458	0	1770	3539	1583	1770	3476	0	1770	3465	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3458	0	1770	3539	1583	1770	3476	0	1770	3465	0
Satd. Flow (RTOR)		20				411		16			27	
Volume (vph)	71	294	52	196	412	370	74	686	94	348	736	119
Lane Group Flow (vph)	79	385	0	218	458	411	82	866	0	387	950	0
Turn Type	Prot			Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8						
Total Split (s)	12.0	20.0	0.0	12.0	20.0	20.0	12.0	27.0	0.0	31.0	46.0	0.0
Act Effct Green (s)	8.5	15.7		9.0	18.1	18.1	8.5	29.1		24.2	46.7	
Actuated g/C Ratio	0.09	0.17		0.10	0.20	0.20	0.09	0.32		0.27	0.52	
v/c Ratio	0.47	0.62		1.23	0.64	0.64	0.49	0.76		0.81	0.52	
Uniform Delay, d1	39.6	31.8		40.5	33.0	0.0	39.7	27.5		30.8	14.9	
Delay	38.9	32.4		145.6	37.6	12.9	39.0	36.4		29.2	17.2	
LOS	D	C		F	D	B	D	D		C	B	
Approach Delay		33.5			49.9			36.6			20.6	
Approach LOS		C			D			D			C	
Queue Length 50th (ft)	43	100		~160	138	0	45	238		232	171	
Queue Length 95th (ft)	88	146		#304	201	194	90	#366		300	203	
Internal Link Dist (ft)		412			943			602			523	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	250			150			70			510		
50th Bay Block Time %				29%				51%				
95th Bay Block Time %				72%	45%		25%	61%				
Queuing Penalty (veh)				115	48		55	46				

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 16 (18%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.23
Intersection Signal Delay: 34.4 Intersection LOS: C
Intersection Capacity Utilization 82.1% ICU Level of Service D
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 6: Sand Creek Road & Deer Valley Road

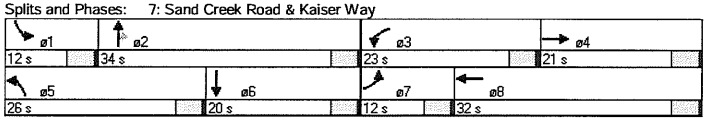


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	4836	0	3433	5055	0	3433	1534	1504	1770	1732	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	4836	0	3433	5055	0	3433	1534	1504	1770	1732	0
Satd. Flow (RTOR)		121			8			228	229		43	
Volume (vph)	17	485	234	277	548	24	377	26	411	69	62	54
Lane Group Flow (vph)	19	799	0	308	636	0	419	257	229	77	129	0
Turn Type	Prot			Prot			Prot		Perm	Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			
Total Split (s)	12.0	21.0	0.0	23.0	32.0	0.0	26.0	34.0	34.0	12.0	20.0	0.0
Act Effct Green (s)	7.5	36.5		14.0	48.8		16.7	21.0	21.0	8.5	10.8	
Actuated g/C Ratio	0.08	0.41		0.16	0.54		0.19	0.23	0.23	0.09	0.12	
v/c Ratio	0.13	0.39		0.58	0.23		0.66	0.48	0.43	0.46	0.52	
Uniform Delay, d1	41.5	16.3		35.2	12.3		34.0	3.1	0.0	39.6	23.9	
Delay	30.5	28.5		34.9	13.0		33.6	5.5	3.7	38.9	24.1	
LOS	C	C		C	B		C	A	A	D	C	
Approach Delay		28.5			20.1			18.0			29.6	
Approach LOS		C			C			B			C	
Queue Length 50th (ft)	10	128		84	55		114	14	0	42	46	
Queue Length 95th (ft)	m16	180		120	124		154	71	52	86	96	
Internal Link Dist (ft)		943			2570			558			722	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	150			130			150		70	150		
50th Bay Block Time %												
95th Bay Block Time %		21%					6%					
Queuing Penalty (veh)		2					15					

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 58 (64%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.66
Intersection Signal Delay: 22.5 Intersection LOS: C
Intersection Capacity Utilization 57.6% ICU Level of Service A
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Sand Creek Road & Kaiser Way

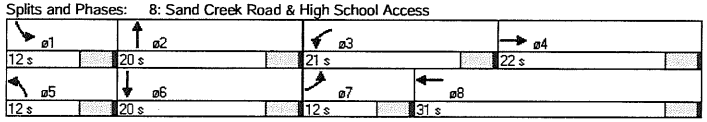


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	4994	0	1770	5060	0	1770	1600	0	1770	1635	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	4994	0	1770	5060	0	1770	1600	0	1770	1635	0
Satd. Flow (RTOR)		30			7			219			73	
Volume (vph)	66	815	108	259	704	23	88	13	197	20	15	66
Lane Group Flow (vph)	73	1026	0	288	808	0	98	233	0	22	90	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Total Split (s)	12.0	22.0	0.0	21.0	31.0	0.0	12.0	20.0	0.0	12.0	20.0	0.0
Act Effct Green (s)	8.3	31.9		15.9	41.4		8.5	13.6		7.4	8.6	
Actuated g/C Ratio	0.11	0.43		0.21	0.55		0.11	0.18		0.10	0.11	
v/c Ratio	0.37	0.48		0.77	0.29		0.49	0.50		0.13	0.36	
Uniform Delay, d1	32.0	16.8		27.8	10.6		32.2	1.5		34.0	5.3	
Delay	31.0	17.2		28.5	9.2		31.5	5.6		30.5	10.6	
LOS	C	B		C	A		C	A		C	B	
Approach Delay		18.1			14.3			13.3			14.5	
Approach LOS		B			B			B			B	
Queue Length 50th (ft)	32	126		131	54		43	5		10	7	
Queue Length 95th (ft)	70	193		141	207		89	62		30	43	
Internal Link Dist (ft)		2570			1012			515			1044	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	300			150			150			150		
50th Bay Block Time %												
95th Bay Block Time %				4%	5%							
Queuing Penalty (veh)				5	7							

Intersection Summary

Cycle Length: 75
Actuated Cycle Length: 75
Offset: 61 (81%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.77
Intersection Signal Delay: 15.8 — Intersection LOS: B
Intersection Capacity Utilization 60.4% — ICU Level of Service B

Splits and Phases: 8: Sand Creek Road & High School Access

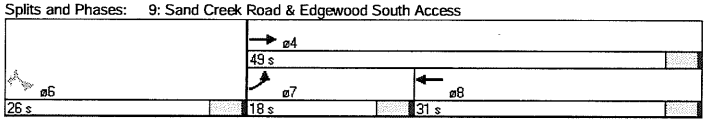


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	5085	0	0	5080	0	0	0	0	1770	0	1583
Flt Permitted	0.950									0.950		
Satd. Flow (perm)	1770	5085	0	0	5080	0	0	0	0	1770	0	1583
Satd. Flow (RTOR)					2							10
Volume (vph)	14	1019	0	0	980	8	0	0	0	10	0	9
Lane Group Flow (vph)	16	1132	0	0	1098	0	0	0	0	11	0	10
Turn Type	Prot									custom		custom
Protected Phases	7	4			8							
Permitted Phases										6		6
Total Split (s)	18.0	49.0	0.0	0.0	31.0	0.0	0.0	0.0	0.0	26.0	0.0	26.0
Act Effct Green (s)	6.9	62.0			59.9					7.0		7.0
Actuated g/C Ratio	0.09	0.83			0.80					0.09		0.09
v/c Ratio	0.10	0.27			0.27					0.07		0.06
Uniform Delay, d1	35.5	1.4			2.8					31.0		0.0
Delay	31.0	2.9			2.2					30.8		17.4
LOS	C	A			A					C		B
Approach Delay		3.3			2.2						24.4	
Approach LOS		A			A						C	
Queue Length 50th (ft)	3	4			9					5		0
Queue Length 95th (ft)	m13	3			115					19		13
Internal Link Dist (ft)		1012			367			678			1094	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	150									200		
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 75
Actuated Cycle Length: 75
Offset: 49 (65%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.27
Intersection Signal Delay: 2.9 — Intersection LOS: A
Intersection Capacity Utilization 31.9% — ICU Level of Service A
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 9: Sand Creek Road & Edgewood South Access

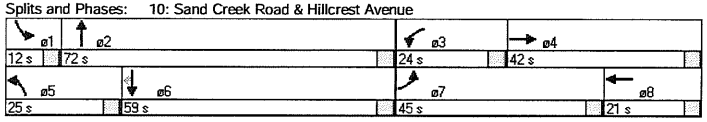


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	3433	4607	0	1770	4994	0	3433	3451	0	1770	3387	1441
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	4607	0	1770	4994	0	3433	3451	0	1770	3387	1441
Satd. Flow (RTOR)		275			14			20			1	536
Volume (vph)	456	213	358	131	246	34	242	366	73	29	714	501
Lane Group Flow (vph)	507	635	0	146	311	0	269	488	0	32	799	551
Turn Type	Prot			Prot			Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												6
Total Split (s)	45.0	42.0	0.0	24.0	21.0	0.0	25.0	72.0	0.0	12.0	59.0	59.0
Act Effct Green (s)	32.1	60.8		17.7	46.4		17.8	53.1		8.3	41.8	41.8
Actuated g/C Ratio	0.21	0.41		0.12	0.31		0.12	0.35		0.06	0.28	0.28
v/c Ratio	0.69	0.31		0.70	0.20		0.66	0.40		0.33	0.85	0.70
Uniform Delay, d1	54.4	16.7		63.5	36.9		63.3	34.8		69.2	50.2	1.1
Delay	50.4	27.8		63.2	40.5		62.9	34.1		66.8	48.0	6.6
LOS	D	C		E	D		E	C		E	D	A
Approach Delay		37.8			47.8			44.3			31.9	
Approach LOS		D			D			D			C	
Queue Length 50th (ft)	162	87		139	84		131	188		31	420	0
Queue Length 95th (ft)	270	201		214	127		176	194		m61	376	219
Internal Link Dist (ft)		367			1265			116			1953	
50th Up Block Time (%)							12%	26%				
95th Up Block Time (%)							30%	23%				
Turn Bay Length (ft)	300			220			200			150		250
50th Bay Block Time %											48%	
95th Bay Block Time %	2%			1%							38%	
Queuing Penalty (veh)	2										13	

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 58 (39%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.85
Intersection Signal Delay: 38.2 Intersection LOS: D
Intersection Capacity Utilization 70.5% ICU Level of Service C
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 10: Sand Creek Road & Hillcrest Avenue

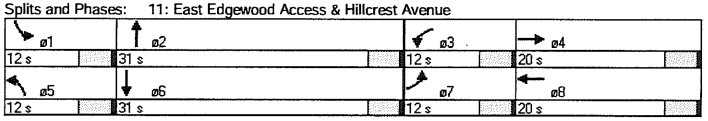


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	1583	0	1770	1583	0	1770	3493	0	1770	3514	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	1583	0	1770	1583	0	1770	3493	0	1770	3514	0
Satd. Flow (RTOR)		237			376			15			7	
Volume (vph)	30	0	2	171	0	214	11	778	72	144	1068	49
Lane Group Flow (vph)	33	2	0	190	238	0	12	944	0	160	1241	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Total Split (s)	12.0	20.0	0.0	12.0	20.0	0.0	12.0	31.0	0.0	12.0	31.0	0.0
Act Effct Green (s)	7.6	6.5		10.8	8.0		7.1	44.3		9.0	54.1	
Actuated g/C Ratio	0.10	0.09		0.14	0.11		0.09	0.59		0.12	0.72	
v/c Ratio	0.18	0.01		0.75	0.47		0.07	0.46		0.75	0.49	
Uniform Delay, d1	34.1	0.0		30.8	0.0		35.3	10.3		31.9	7.6	
Delay	30.6	0.0		47.2	0.0		36.3	12.4		44.1	6.3	
LOS	C	A		D	A		D	B		D	A	
Approach Delay		28.9			20.9			12.7			10.6	
Approach LOS		C			C			B			B	
Queue Length 50th (ft)	14	0		89	0		6	273		73	63	
Queue Length 95th (ft)	39	0		#203	0		m12	348		#166	274	
Internal Link Dist (ft)		296			524			1953			777	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	200			150			150			150		
50th Bay Block Time %								14%				
95th Bay Block Time %				33%				11%		17%	25%	
Queuing Penalty (veh)				39				1		52	19	

Intersection Summary

Cycle Length: 75
Actuated Cycle Length: 75
Offset: 16 (21%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.75
Intersection Signal Delay: 13.1 Intersection LOS: B
Intersection Capacity Utilization 65.1% ICU Level of Service B
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 11: East Edgewood Access & Hillcrest Avenue

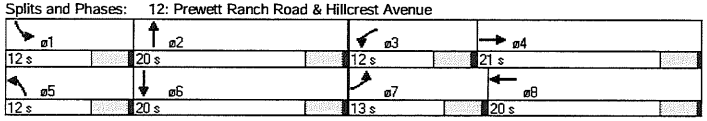


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	1667	0	1770	1788	0	1770	3483	0	1770	3472	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	1667	0	1770	1788	0	1770	3483	0	1770	3472	0
Satd. Flow (RTOR)		72			8			19			23	
Volume (vph)	120	28	65	114	20	7	88	864	101	22	1223	173
Lane Group Flow (vph)	133	103	0	127	30	0	98	1072	0	24	1551	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Total Split (s)	13.0	21.0	0.0	12.0	20.0	0.0	12.0	20.0	0.0	12.0	20.0	0.0
Act Effct Green (s)	13.0	8.2		8.5	7.6		8.4	41.4		7.4	34.2	
Actuated g/C Ratio	0.20	0.13		0.13	0.12		0.13	0.64		0.11	0.53	
v/c Ratio	0.38	0.38		0.55	0.14		0.43	0.48		0.12	0.84	
Uniform Delay, d1	23.5	7.5		27.5	21.1		27.1	10.2		30.3	16.9	
Delay	23.4	11.0		26.8	20.3		26.3	11.7		29.5	50.6	
LOS	C	B		C	C		C	B		C	D	
Approach Delay		18.0			25.5			12.9			50.2	
Approach LOS		B			C			B			D	
Queue Length 50th (ft)	39	11		48	8		36	108		11	~577	
Queue Length 95th (ft)	98	48		96	28		77	#283		m21	#659	
Internal Link Dist (ft)		241			477			777			954	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	100			120			85			115		
50th Bay Block Time %								14%			32%	
95th Bay Block Time %	7%						1%	46%			28%	
Queuing Penalty (veh)	4							29			7	

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 28 (43%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.84
Intersection Signal Delay: 32.7 Intersection LOS: C
Intersection Capacity Utilization 73.2% ICU Level of Service C
Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 12: Prewett Ranch Road & Hillcrest Avenue

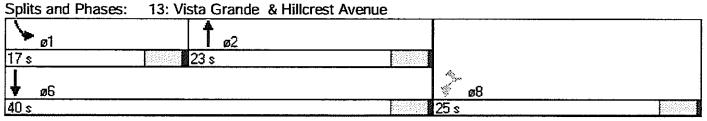


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	0	0	0	1770	0	1583	0	3493	0	1770	3539	0
Flt Permitted				0.950						0.950		
Satd. Flow (perm)	0	0	0	1770	0	1583	0	3493	0	1770	3539	0
Satd. Flow (RTOR)						56		15				
Volume (vph)	0	0	0	79	0	50	0	987	91	103	1425	0
Lane Group Flow (vph)	0	0	0	88	0	56	0	1198	0	114	1583	0
Turn Type				custom		custom				Prot		
Protected Phases								2		1	6	
Permitted Phases				8		8						
Total Split (s)	0.0	0.0	0.0	25.0	0.0	25.0	0.0	23.0	0.0	17.0	40.0	0.0
Act Effct Green (s)				9.3		9.3		41.2		10.0	52.2	
Actuated g/C Ratio				0.14		0.14		0.63		0.15	0.80	
v/c Ratio				0.35		0.20		0.54		0.42	0.56	
Uniform Delay, d1				26.1		0.0		7.8		25.9	2.8	
Delay				24.6		7.7		15.2		22.6	4.5	
LOS				C		A		B		C	A	
Approach Delay					18.0			15.2			5.7	
Approach LOS					B			B			A	
Queue Length 50th (ft)				32		0		194		43	327	
Queue Length 95th (ft)				66		26		340		m39	m252	
Internal Link Dist (ft)		216			502			954			614	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)				100						195		
50th Bay Block Time %											6%	
95th Bay Block Time %											7%	
Queuing Penalty (veh)											7	

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 16 (25%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.56
Intersection Signal Delay: 10.0 Intersection LOS: B
Intersection Capacity Utilization 55.3% ICU Level of Service A
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 13: Vista Grande & Hillcrest Avenue



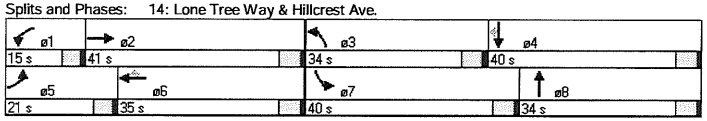
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	4950	0	1770	5085	1583	1770	3209	0	*1900	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	4950	0	1769	5085	1583	1770	3209	0	3429	3539	1583
Satd. Flow (RTOR)		31				511		162				74
Volume (vph)	277	1443	277	571	1295	702	342	261	345	902	574	64
Lane Group Flow (vph)	326	2024	0	614	1392	755	462	819	0	1037	660	74
Turn Type	Prot			Prot		Perm	Prot			Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases						6						4
Total Split (s)	21.0	41.0	0.0	15.0	35.0	35.0	34.0	34.0	0.0	40.0	40.0	40.0
Act Effct Green (s)	17.9	38.5		12.0	32.5	32.5	30.9	30.4		37.1	36.5	36.5
Actuated g/C Ratio	0.14	0.30		0.09	0.25	0.25	0.24	0.23		0.29	0.28	0.28
v/c Ratio	1.33	1.36		3.77	1.09	0.97	1.09	0.93		1.92	0.66	0.15
Uniform Delay, d1	56.0	44.8		59.0	48.7	15.3	49.5	38.9		46.5	41.3	0.0
Delay	162.3	136.3		390.6	104.2	47.5	107.8	46.5		271.3	41.6	7.6
LOS	F	F		F	F	D	F	D		F	D	A
Approach Delay		140.0			152.4			68.6			174.7	
Approach LOS		F			F			E			F	
Queue Length 50th (ft)	~349	~822		~955	~480	311	~419	328		~691	257	0
Queue Length 95th (ft)	m#308	m#691		#1195	#598	#644	#482	314		#789	311	34
Internal Link Dist (ft)		945			1420			712			1758	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	350			210		210	195			855		
50th Bay Block Time %	4%	31%		97%	64%	28%	43%	17%				
95th Bay Block Time %		24%		98%	66%	49%	71%	13%				
Queuing Penalty (veh)	15	89		454	400	179	233	68				

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 50 (38%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 3.77
Intersection Signal Delay: 140.5 Intersection LOS: F
Intersection Capacity Utilization 142.0% ICU Level of Service H

* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 14: Lone Tree Way & Hillcrest Ave.

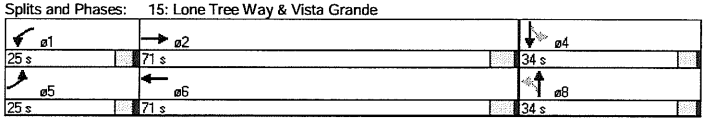


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	5050	0	1770	5065	0	1770	1656	0	1770	1632	0
Flt Permitted	0.950			0.950			0.448			0.408		
Satd. Flow (perm)	1770	5050	0	1769	5065	0	835	1656	0	760	1632	0
Satd. Flow (RTOR)		7			5			105			162	
Volume (vph)	75	2243	91	130	2264	65	90	49	143	82	24	115
Lane Group Flow (vph)	83	2593	0	140	2504	0	102	218	0	115	196	0
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		
Total Split (s)	25.0	71.0	0.0	25.0	71.0	0.0	34.0	34.0	0.0	34.0	34.0	0.0
Act Effct Green (s)	12.9	79.8		16.6	83.5		24.6	24.6		24.6	24.6	
Actuated g/C Ratio	0.10	0.61		0.13	0.64		0.19	0.19		0.19	0.19	
v/c Ratio	0.47	0.84		0.62	0.77		0.65	0.55		0.80	0.45	
Uniform Delay, d1	55.3	19.8		53.7	16.4		48.6	23.9		50.3	7.6	
Delay	60.0	14.6		41.3	22.1		47.5	22.9		51.1	9.8	
LOS	E	B		D	C		D	C		D	A	
Approach Delay		16.0			23.1			30.7			25.1	
Approach LOS		B			C			C			C	
Queue Length 50th (ft)	70	222		114	395		79	83		92	24	
Queue Length 95th (ft)	m51	m216		m108	m490		134	152		119	42	
Internal Link Dist (ft)		1420			1055			786			614	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	200			200			130			100		
50th Bay Block Time %		14%			30%							
95th Bay Block Time %		4%			24%		7%	12%		16%		
Queuing Penalty (veh)		8			38		7	6		15		

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 98 (75%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.84
Intersection Signal Delay: 20.4 Intersection LOS: C
Intersection Capacity Utilization 90.8% ICU Level of Service E
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 15: Lone Tree Way & Vista Grande



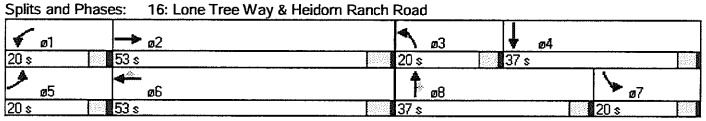
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	5050	0	1770	4806	1362	3433	1863	1583	1770	1747	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	5050	0	1770	4806	1362	3433	1863	1583	1770	1747	0
Satd. Flow (RTOR)		6				8			312		26	
Volume (vph)	7	2663	126	420	2841	39	250	21	243	38	19	13
Lane Group Flow (vph)	7	2846	0	477	3228	44	500	42	486	81	68	0
Turn Type	Prot			Prot		Perm	Prot		Perm	Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases						6			8			
Total Split (s)	20.0	53.0	0.0	20.0	53.0	53.0	20.0	37.0	37.0	20.0	37.0	0.0
Act Effct Green (s)	7.6	65.6		17.0	83.3	83.3	17.0	24.4	24.4	13.4	20.5	
Actuated g/C Ratio	0.06	0.50		0.13	0.64	0.64	0.13	0.19	0.19	0.10	0.16	
v/c Ratio	0.07	1.12		2.06	1.05	0.05	1.11	0.12	0.88	0.45	0.23	
Uniform Delay, d1	62.4	32.5		56.5	25.6	8.5	56.5	43.9	17.8	56.2	29.8	
Delay	79.4	89.9		237.8	47.9	2.9	113.1	41.0	17.8	54.2	27.6	
LOS	E	F		F	D	A	F	D	B	D	C	
Approach Delay		89.9			71.5			65.1			42.0	
Approach LOS		F			E			E			D	
Queue Length 50th (ft)	6	~1024		~651	~345	1	~249	30	148	65	31	
Queue Length 95th (ft)	m7	#1273		m#433	m#915	m1	144	32	18	58	25	
Internal Link Dist (ft)		1055			905			972			316	
50th Up Block Time (%)												
95th Up Block Time (%)		11%										
Turn Bay Length (ft)	185			400		95	200		200	50		
50th Bay Block Time %		38%		81%			23%			24%		
95th Bay Block Time %		73%		9%	17%					16%		
Queuing Penalty (veh)		165		488	41		59			13		

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 114 (88%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 2.06
Intersection Signal Delay: 76.8 Intersection LOS: E
Intersection Capacity Utilization 112.7% ICU Level of Service G

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 16: Lone Tree Way & Heidorn Ranch Road



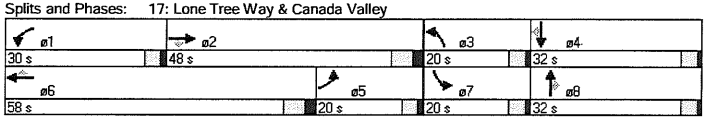
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	5085	1583	3433	5085	1583	3433	1609	1504	1770	1863	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	5085	1583	3433	5085	1583	3433	1609	1504	1770	1863	1583
Satd. Flow (RTOR)			105			285		55	364			117
Volume (vph)	189	2746	102	575	2968	431	192	93	473	598	78	105
Lane Group Flow (vph)	195	2831	105	625	3226	468	278	342	479	664	87	117
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Total Split (s)	20.0	48.0	48.0	30.0	58.0	58.0	20.0	32.0	32.0	20.0	32.0	32.0
Act Effct Green (s)	17.0	48.2	48.2	26.2	57.4	57.4	15.0	26.6	26.6	17.0	28.5	28.5
Actuated g/C Ratio	0.13	0.37	0.37	0.20	0.44	0.44	0.12	0.20	0.20	0.13	0.22	0.22
v/c Ratio	0.84	1.50	0.16	0.90	1.44	0.55	0.70	0.92	0.80	2.87	0.21	0.27
Uniform Delay, d1	55.2	40.9	0.0	50.7	36.3	9.2	55.3	42.3	11.0	56.5	41.5	0.0
Delay	49.7	190.0	7.8	56.0	183.8	10.2	55.2	50.3	12.7	353.1	41.6	7.2
LOS	D	F	A	E	F	B	E	D	B	F	D	A
Approach Delay		175.1			146.5			35.1			275.3	
Approach LOS		F			F			D			F	
Queue Length 50th (ft)	151	~1239	9	265	~1379	108	117	250	93	~960	59	0
Queue Length 95th (ft)	m136	m#1086	m14	#361	#1456	214	121	254	73	#1195	108	50
Internal Link Dist (ft)		905			760			542			1064	
50th Up Block Time (%)		19%			43%							
95th Up Block Time (%)		9%			46%					15%		
Turn Bay Length (ft)	320		630	400		350	150			170		170
50th Bay Block Time %		77%			53%			30%		80%		
95th Bay Block Time %		77%			55%			31%		84%		
Queuing Penalty (veh)		557			1766			85		167		

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 87 (67%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 2.87
Intersection Signal Delay: 154.9 Intersection LOS: F
Intersection Capacity Utilization 144.4% ICU Level of Service H

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

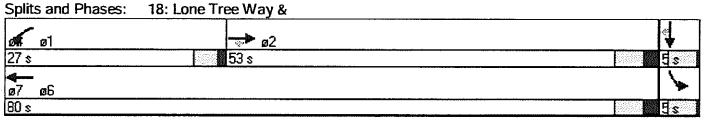
Splits and Phases: 17: Lone Tree Way & Canada Valley



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	0	5085	1583	3433	5085	0	0	0	0	1681	1681	1583
Flt Permitted				0.950						0.950	0.950	
Satd. Flow (perm)	0	5085	1583	3433	5085	0	0	0	0	1681	1681	1583
Satd. Flow (RTOR)			89									1
Volume (vph)	0	2759	1020	581	3938	0	0	0	0	421	0	222
Lane Group Flow (vph)	0	3208	1186	668	4526	0	0	0	0	234	234	247
Turn Type			Perm	Prot						Prot		Perm
Protected Phases		2		1	6					7	4	
Permitted Phases			2									4
Total Split (s)	0.0	53.0	53.0	27.0	80.0	0.0	0.0	0.0	0.0	5.0	5.0	5.0
Act Effct Green (s)		52.4	52.4	21.6	77.0					2.0	2.0	2.0
Actuated g/C Ratio		0.62	0.62	0.25	0.91					0.02	0.02	0.02
v/c Ratio		1.02	1.17	0.77	0.98					5.85	5.85	6.50
Uniform Delay, d1		16.3	14.8	29.4	3.4					41.5	41.5	40.4
Delay		43.6	99.9	29.2	11.2					432.8	432.8	440.5
LOS		D	F	C	B					F	F	F
Approach Delay		58.8			13.6						435.5	
Approach LOS		E			B						F	
Queue Length 50th (ft)		~693	~765	166	216					~253	~253	~259
Queue Length 95th (ft)		#735	#949	212	235					#401	#401	#404
Internal Link Dist (ft)		760			760			536			445	
50th Up Block Time (%)			8%									
95th Up Block Time (%)			31%		1%							
Turn Bay Length (ft)				310						280		
50th Bay Block Time %					6%							
95th Bay Block Time %					6%					32%	32%	
Queuing Penalty (veh)			229		38					37	37	

Intersection Summary
Cycle Length: 85
Actuated Cycle Length: 85
Offset: 34 (40%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 6.50
Intersection Signal Delay: 62.1 Intersection LOS: E
Intersection Capacity Utilization 115.4% ICU Level of Service G
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

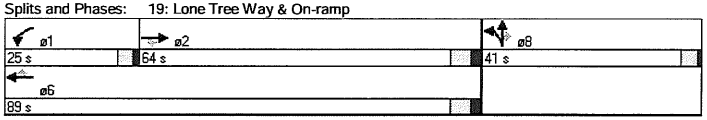
Splits and Phases: 18: Lone Tree Way &



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	0	5085	1583	1770	5085	1583	1681	1681	1583	0	0	0
Flt Permitted				0.950			0.950	0.950				
Satd. Flow (perm)	0	5085	1583	1770	5085	1583	1681	1681	1583	0	0	0
Satd. Flow (RTOR)			155			316			290			
Volume (vph)	0	2884	296	99	3290	423	1229	0	484	0	0	0
Lane Group Flow (vph)	0	3393	348	112	3739	481	1397	1396	1100	0	0	0
Turn Type			Perm	Prot		Perm	Split		Perm			
Protected Phases		2		1	6		8	8				
Permitted Phases			2			6			8			
Total Split (s)	0.0	64.0	64.0	25.0	89.0	89.0	41.0	41.0	41.0	0.0	0.0	0.0
Act Effct Green (s)		69.7	69.7	13.3	86.1	86.1	38.0	38.0	38.0			
Actuated g/C Ratio		0.54	0.54	0.10	0.66	0.66	0.29	0.29	0.29			
v/c Ratio		1.24	0.38	0.62	1.11	0.42	2.85	2.84	1.65			
Uniform Delay, d1		30.1	9.0	55.9	22.0	2.9	46.0	46.0	26.0			
Delay		127.2	9.9	55.2	73.5	3.1	351.9	351.8	223.3			
LOS		F	A	E	E	A	F	F	F			
Approach Delay		116.3			65.2			315.5				
Approach LOS		F			E			F				
Queue Length 50th (ft)		~1301	85	92	~1319	49	~2122	~2120	~1168			
Queue Length 95th (ft)		#1312	149	147	#1330	95	#942	#940	292			
Internal Link Dist (ft)		760			620			935			1156	
50th Up Block Time (%)		34%			24%		57%	57%	28%			
95th Up Block Time (%)		38%			25%							
Turn Bay Length (ft)			240	280		250	1000					
50th Bay Block Time %		42%			30%		53%	53%				
95th Bay Block Time %		46%			30%							
Queuing Penalty (veh)		1377			33		373	373				

Intersection Summary
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 10 (8%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 2.85
Intersection Signal Delay: 162.6 Intersection LOS: F
Intersection Capacity Utilization 159.2% ICU Level of Service H
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 19: Lone Tree Way & On-ramp

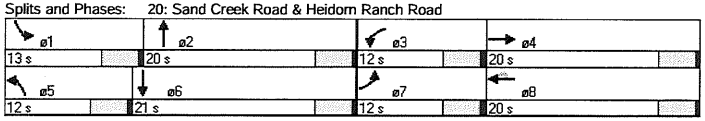


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	3529	0	1770	3539	1583	1770	1833	0	1770	1781	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3529	0	1770	3539	1583	1770	1833	0	1770	1781	0
Satd. Flow (RTOR)		3				116		9			32	
Volume (vph)	33	292	5	12	327	104	5	108	13	179	198	83
Lane Group Flow (vph)	37	330	0	13	363	116	6	134	0	199	312	0
Turn Type	Prot			Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8						
Total Split (s)	12.0	20.0	0.0	12.0	20.0	20.0	12.0	20.0	0.0	13.0	21.0	0.0
Act Effct Green (s)	7.6	15.2		7.0	12.7	12.7	6.7	28.7		9.9	39.5	
Actuated g/C Ratio	0.12	0.23		0.11	0.20	0.20	0.10	0.44		0.15	0.61	
v/c Ratio	0.18	0.40		0.07	0.52	0.29	0.03	0.16		0.74	0.29	
Uniform Delay, d1	29.1	20.8		30.3	22.7	0.0	30.3	12.0		26.3	8.3	
Delay	25.6	20.0		31.5	15.1	2.7	26.2	13.9		24.4	12.5	
LOS	C	B		C	B	A	C	B		C	B	
Approach Delay		20.6			12.6			14.4			17.1	
Approach LOS		C			B			B			B	
Queue Length 50th (ft)	14	61		4	70	8	2	24		142	210	
Queue Length 95th (ft)	37	86		m14	68	4	12	80		m6	m126	
Internal Link Dist (ft)		1338			590			616			1272	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	150			150		150	150			150		
50th Bay Block Time %											10%	
95th Bay Block Time %												
Queuing Penalty (veh)											10	

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 16 (25%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.74
Intersection Signal Delay: 16.2 Intersection LOS: B
Intersection Capacity Utilization 40.6% ICU Level of Service A
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 20: Sand Creek Road & Heidorn Ranch Road

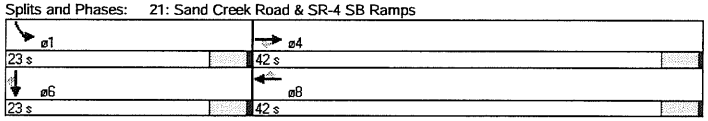


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	0	3539	1583	0	3539	1583	0	0	0	1681	1610	1504
Flt Permitted										0.950	0.950	
Satd. Flow (perm)	0	3539	1583	0	3539	1583	0	0	0	1681	1610	1504
Satd. Flow (RTOR)			89			169						213
Volume (vph)	0	349	80	0	675	152	0	0	0	1144	0	225
Lane Group Flow (vph)	0	388	89	0	750	169	0	0	0	636	635	250
Turn Type			Perm			Perm				Prot		Perm
Protected Phases		4			8					1	6	
Permitted Phases			4			8						6
Total Split (s)	0.0	42.0	42.0	0.0	42.0	42.0	0.0	0.0	0.0	23.0	23.0	23.0
Act Effct Green (s)		39.0	39.0		39.0	39.0				20.0	20.0	20.0
Actuated g/C Ratio		0.60	0.60		0.60	0.60				0.31	0.31	0.31
v/c Ratio		0.18	0.09		0.35	0.17				1.23	1.28	0.41
Uniform Delay, d1		5.8	0.0		6.6	0.0				22.5	22.5	2.4
Delay		2.3	1.4		3.6	0.3				113.3	128.2	4.5
LOS		A	A		A	A				F	F	A
Approach Delay		2.2			3.0						101.7	
Approach LOS		A			A						F	
Queue Length 50th (ft)		1	0		30	0				~336	~360	10
Queue Length 95th (ft)		0	m0		40	4				#528	#560	61
Internal Link Dist (ft)		1483			767			374			330	
50th Up Block Time (%)										6%	9%	
95th Up Block Time (%)										41%	42%	
Turn Bay Length (ft)			100							325		225
50th Bay Block Time %										8%	10%	
95th Bay Block Time %										42%	43%	
Queuing Penalty (veh)										221	170	

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 58 (89%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.28
Intersection Signal Delay: 54.3 Intersection LOS: D
Intersection Capacity Utilization 65.1% ICU Level of Service B
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 21: Sand Creek Road & SR-4 SB Ramps

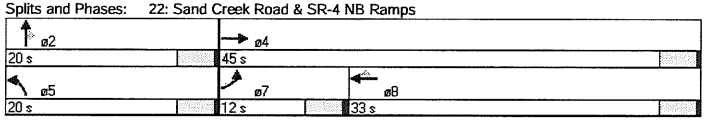


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	3433	3539	0	0	3539	1583	1681	1441	1504	0	0	0
Flt Permitted	0.950						0.950					
Satd. Flow (perm)	3433	3539	0	0	3539	1583	1681	1441	1504	0	0	0
Satd. Flow (RTOR)						697		53	53			
Volume (vph)	182	1311	0	0	813	627	14	0	308	0	0	0
Lane Group Flow (vph)	202	1457	0	0	903	697	16	171	171	0	0	0
Turn Type	Prot					Perm	Prot		Perm			
Protected Phases	7	4			8		5	2				
Permitted Phases						8			2			
Total Split (s)	12.0	45.0	0.0	0.0	33.0	33.0	20.0	20.0	20.0	0.0	0.0	0.0
Act Effct Green (s)	8.7	47.4			35.7	35.7	11.6	11.6	11.6			
Actuated g/C Ratio	0.13	0.73			0.55	0.55	0.18	0.18	0.18			
v/c Ratio	0.44	0.56			0.46	0.59	0.05	0.57	0.55			
Uniform Delay, d1	25.9	4.0			8.9	0.0	22.1	16.5	16.5			
Delay	39.1	1.8			9.9	1.2	19.6	15.9	15.9			
LOS	D	A			A	A	B	B	B			
Approach Delay		6.3			6.1			16.1				
Approach LOS		A			A			B				
Queue Length 50th (ft)	48	41			104	0	5	46	44			
Queue Length 95th (ft)	m43	m28			179	52	18	95	90			
Internal Link Dist (ft)		767			541			321			323	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	100					350	200		225			
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 49 (75%), Referenced to phase 4:EBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.59
Intersection Signal Delay: 7.2 — Intersection LOS: A
Intersection Capacity Utilization 62.9% — ICU Level of Service B
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 22: Sand Creek Road & SR-4 NB Ramps

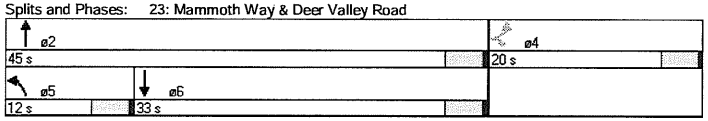


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	0	1583	0	0	0	1770	3539	0	0	3511	0
Flt Permitted	0.950						0.950					
Satd. Flow (perm)	1770	0	1583	0	0	0	1770	3539	0	0	3511	0
Satd. Flow (RTOR)			33								11	
Volume (vph)	40	0	30	0	0	0	60	1117	0	0	929	50
Lane Group Flow (vph)	44	0	33	0	0	0	67	1241	0	0	1088	0
Turn Type	custom		custom				Prot					
Protected Phases							5	2			6	
Permitted Phases	4		4									
Total Split (s)	20.0	0.0	20.0	0.0	0.0	0.0	12.0	45.0	0.0	0.0	33.0	0.0
Act Effct Green (s)	17.0		17.0				9.0	42.0			30.0	
Actuated g/C Ratio	0.26		0.26				0.14	0.65			0.46	
v/c Ratio	0.10		0.08				0.27	0.54			0.67	
Uniform Delay, d1	18.2		0.0				25.1	6.3			13.5	
Delay	18.5		7.5				25.6	6.4			14.9	
LOS	B		A				C	A			B	
Approach Delay		13.8						7.4			14.9	
Approach LOS		B						A			B	
Queue Length 50th (ft)	13		0				24	118			142	
Queue Length 95th (ft)	35		18				57	163			266	
Internal Link Dist (ft)		417			362			950			970	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)												
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 65
Offset: 16 (25%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Control Type: Pretimed
Maximum v/c Ratio: 0.67
Intersection Signal Delay: 10.9 — Intersection LOS: B
Intersection Capacity Utilization 47.3% — ICU Level of Service A

Splits and Phases: 23: Mammoth Way & Deer Valley Road



SIGNAL WARRANT ANALYSIS

TRAFFIC SIGNAL VOLUME WARRANT ANALYSIS

INTERSECTION NAME: Prewett Ranch Drive and Hillcrest Avenue COUNT DATE: Existing

MAJOR STREET: Prewett Ranch Drive # OF APPROACH LANES: 1

MINOR STREET: Hillcrest Avenue # OF APPROACH LANES: 2

ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N): N

85TH PERCENTILE SPEED GREATER THAN 40 MPH ON MAJOR STREET (Y OR N): N

			MAJOR ST BOTH APPROACHES	MINOR ST HIGHEST APPROACH	Warrant 1 - Condition A			Warrant 1 - Condition B			WARRANT 2	WARRANT 3
					MAJOR STREET	MINOR STREET	BOTH MET	MAJOR STREET	MINOR STREET	BOTH MET		
THRESHOLD VALUES →					500	200		750	100			
06:00 AM	TO	07:00 AM										
07:00 AM	TO	08:00 AM	204	121					Y			
08:00 AM	TO	09:00 AM										
09:00 AM	TO	10:00 AM										
10:00 AM	TO	11:00 AM										
11:00 AM	TO	12:00 PM										
12:00 PM	TO	01:00 PM										
01:00 PM	TO	02:00 PM										
02:00 PM	TO	03:00 PM										
03:00 PM	TO	04:00 PM										
04:00 PM	TO	05:00 PM	170	156					Y			
05:00 PM	TO	06:00 PM										
06:00 PM	TO	07:00 PM										
07:00 PM	TO	08:00 PM										
08:00 PM	TO	09:00 PM										
09:00 PM	TO	10:00 PM										
			374	277			**0**			**0**	**0**	**0**
					8 HOURS NEEDED **NOT SATISFIED**			8 HOURS NEEDED **NOT SATISFIED**			4 HRS NEEDED **NOT SATISFIED**	1 HR NEEDED **NOT SATISFIED**

WARRANT 1 - Condition A -- Minimum Vehicular Volume Warrant (8 hours)

WARRANT 1 - Condition B -- Interruption of Continuous Traffic Warrant (8 hours)

WARRANT 2 -- Four Hour Volume Warrant - Figure 4C-1

WARRANT 3 -- Peak Hour Volume Warrant - Figure 4C-3

Conditions: Based on 2000 MUTCD

TRAFFIC SIGNAL VOLUME WARRANT ANALYSIS

INTERSECTION NAME: Hillcrest Avenue and Prewett Ranch Drive COUNT DATE: Near-Term

MAJOR STREET: Hillcrest Avenue # OF APPROACH LANES: 2

MINOR STREET: Prewett Ranch Drive # OF APPROACH LANES: 1

ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N): N

85TH PERCENTILE SPEED GREATER THAN 40 MPH ON MAJOR STREET (Y OR N): N

			MAJOR ST BOTH APPROACHES	MINOR ST HIGHEST APPROACH	Warrant 1 - Condition A			Warrant 1 - Condition B			WARRANT 2	WARRANT 3
					MAJOR STREET	MINOR STREET	BOTH MET	MAJOR STREET	MINOR STREET	BOTH MET		
THRESHOLD VALUES →					600	150		900	75			
06:00 AM	TO	07:00 AM										
07:00 AM	TO	08:00 AM	294	163		Y			Y			
08:00 AM	TO	09:00 AM										
09:00 AM	TO	10:00 AM										
10:00 AM	TO	11:00 AM										
11:00 AM	TO	12:00 PM										
12:00 PM	TO	01:00 PM										
01:00 PM	TO	02:00 PM										
02:00 PM	TO	03:00 PM										
03:00 PM	TO	04:00 PM										
04:00 PM	TO	05:00 PM										
05:00 PM	TO	06:00 PM	288	152		Y			Y			
06:00 PM	TO	07:00 PM										
07:00 PM	TO	08:00 PM										
08:00 PM	TO	09:00 PM										
09:00 PM	TO	10:00 PM										
			582	315			**0**			**0**	**0**	**0**
					8 HOURS NEEDED **NOT SATISFIED**			8 HOURS NEEDED **NOT SATISFIED**			4 HRS NEEDED **NOT SATISFIED**	1 HR NEEDED **NOT SATISFIED**

WARRANT 1 - Condition A -- Minimum Vehicular Volume Warrant (8 hours)

WARRANT 1 - Condition B -- Interruption of Continuous Traffic Warrant (8 hours)

WARRANT 2 -- Four Hour Volume Warrant - Figure 4C-1

WARRANT 3 -- Peak Hour Volume Warrant - Figure 4C-3

Conditions: Based on 2000 MUTCD

TRAFFIC SIGNAL VOLUME WARRANT ANALYSIS

INTERSECTION NAME: Hillcrest Avenue and Prewett Ranch Drive

COUNT DATE: Near-Term + Project

MAJOR STREET: Hillcrest Avenue # OF APPROACH LANES: 2

MINOR STREET: Prewett Ranch Drive # OF APPROACH LANES: 1

ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N): N

85TH PERCENTILE SPEED GREATER THAN 40 MPH ON MAJOR STREET (Y OR N): N

			MAJOR ST BOTH APPROACHES	MINOR ST HIGHEST APPROACH	Warrant 1 - Condition A			Warrant 1 - Condition B			WARRANT 2	WARRANT 3
					MAJOR STREET	MINOR STREET	BOTH MET	MAJOR STREET	MINOR STREET	BOTH MET		
THRESHOLD VALUES →					600	150		900	75			
06:00 AM	TO	07:00 AM										
07:00 AM	TO	08:00 AM										
08:00 AM	TO	09:00 AM										
09:00 AM	TO	10:00 AM										
10:00 AM	TO	11:00 AM										
11:00 AM	TO	12:00 PM										
12:00 PM	TO	01:00 PM										
01:00 PM	TO	02:00 PM										
02:00 PM	TO	03:00 PM										
03:00 PM	TO	04:00 PM										
04:00 PM	TO	05:00 PM										
05:00 PM	TO	06:00 PM										
06:00 PM	TO	07:00 PM										
07:00 PM	TO	08:00 PM										
08:00 PM	TO	09:00 PM										
09:00 PM	TO	10:00 PM										
			0	0			**0**			**0**	**0**	**0**
					8 HOURS NEEDED **NOT SATISFIED**			8 HOURS NEEDED **NOT SATISFIED**			4 HRS NEEDED **NOT SATISFIED**	1 HR NEEDED **NOT SATISFIED**

WARRANT 1 - Condition A -- Minimum Vehicular Volume Warrant (8 hours)

WARRANT 1 - Condition B -- Interruption of Continuous Traffic Warrant (8 hours)

WARRANT 2 -- Four Hour Volume Warrant - Figure 4C-1

WARRANT 3 -- Peak Hour Volume Warrant - Figure 4C-3

Conditions: Based on 2000 MUTCD

QUEUING SUMMARY

Queuing Summary

Antioch Aviano Adult Community - Traffic Impact Study

Scenarios Analyzed	Turning Movement	Deer Valley Road																Sand Creek Road																	
		Marita Drive #2			Prewett Ranch Drive #3			Wellness Way #4			Kaiser Way #5			Sand Creek Road #6			Mammoth Way #23			Kaiser Way #7			Primary Access to Kaiser #8			Project South Access #9			Hillcrest Avenue #10			Heidorn Ranch Road #20			SR-4 Bypass SB Ramps #21			SR-4 Bypass NB Ramps #22		
		Link	AM	PM	Link	AM	PM	Link	AM	PM	Link	AM	PM	Link	AM	PM	Link	AM	PM	Link	AM	PM	Link	AM	PM	Link	AM	PM	Link	AM	PM	Link	AM	PM	Link	AM	PM	Link	AM	PM
Existing	EBL	40	25	<25	155	62	63										240	67	<25																		
	EBR																																						
	WBL	100	<25	38	80	31	<25	185	<25	<25																													
	WBR										90	<25	39																						420	73	65			
	NBL	175	64	25	140	43	87	255	<25	<25				70	<25	<25	120	17	39																145	<25	<25			
	NBR							175	<25	<25	480	<25	<25																											
	SBL	125	190	36	140	96	<12	230	<25	<25	220	99	33	510	<25	<25																			620	322	557			
	SBR																																						
Near-Term	EBL	40	25	<25	155	149	68							150	<25	<25	240	67	<25				250	<25	<25	150	<25	<25	200	168	83							100	<25	<25
	EBR																																		100	<25	<25			
	WBL	100	<25	38	80	34	<25	185	<25	<25																													
	WBR										90	39	56										150	<25	<25	150	<25	<25	150	<25	<25							350	<25	<25
	NBL	175	57	<25	140	43	88	255	<25	<25				70	<25	<25	120	<25	41																			200	<25	<25
	NBR							175	<25	<25	480	<25	<25																									225	<25	57
	SBL	125	179	<25	140	107	139	230	25	57	220	254	118	510	<25	<25							150	137	66	200	<25	<25	150	<25	<25				325	142	273			
	SBR																																		225	<25	<25			
Near-Term + Project	EBL	40	25	<25	155	149	68							150	<25	<25	240	55	<25				250	<25	<25	150	<25	<25	200	186	92							100	<25	<25
	EBR																																		100	<25	<25			
	WBL	100	<25	38	80	34	<25	185	<25	<25																													
	WBR										90	39	56										150	<25	<25	150	<25	<25	150	<25	<25							350	<25	<25
	NBL	175	57	<25	140	44	88	255	<25	<25				70	<25	<25	120	<25	41																			200	<25	<25
	NBR							175	<25	<25	480	<25	<25																									225	<25	57
	SBL	125	177	<25	140	105	135	230	<25	57	220	254	118	510	<25	<25							150	137	66	200	25	<25	150	<25	<25				325	142	273			
	SBR																																		225	<25	<25			
Long-Term Year 2025 Without Project	EBL	40	25	<25	155	116	26	150	96	46				250	247	88	240	63	35	150	41	<25	300	304	70	150	<25	<25	300	164	283	150	77	37				100	91	40
	EBR																																		100	<25	<25			
	WBL	100	<25	43	80	43	64	185	33	73				150	68	293				130	132	120	250	134	209				220	99	214	150	<25	<25						
	WBR										90	36	97																			150	66	<25				350	89	52
	NBL	175	57	<25	140	71	310	255	236	371				70	94	90	120	<25	57	150	38	154	150	112	89				200	124	176	150	<25	<25				200	<25	<25
	NBR							175	<25	<25	480	30	<25							70	38	52																225	63	90
	SBL	125	120	<25	140	75	125	230	64	62	220	247	132	510	299	300				150	41	86	150	118	30	200	<25	<25	150	<25	66	150	<25	<25	325	396	528			
	SBR																												250	145	75				225	28	51			
Long-Term Year 2025 With Project	EBL	40	25	<25	155	116	26	150	96	46				250	247	88	240	63	35	150	41	<25	300	305	70	150	<25	<25	300	162	270	150	77	37				100	95	43
	EBR																																		100	<25	<25			
	WBL	100	<25	43	80	43	64	185	33	73				150	80	304				130	134	120	250	145	141				220	99	214	150	<25	<25						
	WBR										90	36	81																			150	60	<25				350	91	52
	NBL	175	57	<25	140	71	311	255	236	371				70	94	90	120	<25	57	150	38	154	150	112	89				200	124	176	150	<25	<25				200	<25	<25
	NBR							175	<25	<25	480	30	<25							70	38	52																225	63	90
	SBL	125	120	<25	140	75	125	230	64	62	220	247	132	510	299	300				150	41	86	150	118	30	200	28	<25	150	<25	61	150	<25	<25	325	396	528			
	SBR																												250	152	219				225	30	61			

Queuing Summary

Antioch Aviano Adult Community - Traffic Impact Study

Scenarios Analyzed	Turning Movement	Hillcrest Avenue									Lone Tree Way																				
		East Project Access #11			Prewett Ranch Drive #12			Vista Grande Drive #13			Deer Valley Road #1			Hillcrest Avenue #14			Vista Grande Drive #15			Heidorn Ranch Road #16			Canada Valley Road #17			SB SR-4 Bypass #18			NB SR-4 Bypass (Jeffrey Way) #19		
		Link	AM	PM	Link	AM	PM	Link	AM	PM	Link	AM	PM	Link	AM	PM	Link	AM	PM	Link	AM	PM	Link	AM	PM	Link	AM	PM	Link	AM	PM
Existing	EBL										195	98	203	350	154	192	200	85	47	185	<25	<25	320	75	83						
	EBR										75	153	178				75	26	36	115	<25	<25	630	<25	<25	400	168	830			
	WBL							100	51	48	195	222	235	210	62	83	200	79	166	400	46	26	400	141	176	310	271	298	280	33	47
	WBR										75	95	81	210	422	244	75	<25	<25	95	<25	<25	350	<25	<25						
	NBL										180	97	113	195	80	73	130	118	75	200	45	50	150	34	77	150	393	585			
	NBR																			200	<25	<25									
	SBL							195	65	66	150	488	243	200	448	507	100	65	46	50	<25	<25									
	SBR													290	59	36															
Near-Term	EBL	200	<25	<25	100	101	102				195	98	178	350	170	252	200	44	46	185	<25	<25	320	123	291						
	EBR										75	233	243										630	<25	<25				240	<25	26
	WBL				120	<25	<25	100	56	50	195	507	422	210	89	118	200	95	180	400	58	48	400	169	208	310	69	111	280	37	52
	WBR										75	226	315	730	450	376				95	<25	<25	350	<25	57				250	<25	<25
	NBL	150	<25	<25	85	<25	<25				180	120	194	195	312	136	130	133	85	200	48	52	150	36	82				1000	561	826
	NBR																			200	<25	<25									
	SBL				115	<25	<25	195	43	41	150	693	413	728	621	733	100	73	68	50	<25	<25	170	960	932	280	64	131			
	SBR																						170	63	55						
Near-Term + Project	EBL	200	66	52	100	101	102				195	98	178	350	168	240	200	42	43	185	<25	<25	320	120	292						
	EBR										75	234	245										630	<25	<25				240	<25	28
	WBL				120	<25	<25	100	56	50	195	513	429	210	118	197	200	96	180	400	58	47	400	168	208	310	69	111	280	37	52
	WBR										75	235	324	730	452	408				95	<25	<25	350	<25	57				250	<25	<25
	NBL	150	<25	<25	85	<25	<25				180	124	194	195	370	169	130	133	85	200	48	52	150	37	84				1000	561	826
	NBR																			200	<25	<25									
	SBL				115	<25	<25	195	42	38	150	707	436	728	621	733	100	73	68	50	<25	<25	170	960	932	280	64	131			
	SBR																						170	63	55						
Long-Term Year 2025 Without Project	EBL	200	46	<25	100	165	98				195	100	180	350	166	317	200	65	52	185	<25	<25	320	50	136						
	EBR																						630	<25	<25				240	43	149
	WBL	150	<25	189	120	59	96	100	65	66	195	464	179	210	170	1169	200	63	108	400	424	435	400	316	361	310	118	212	280	189	147
	WBR													730	460	729				95	<25	<25	350	59	213				250	33	94
	NBL	150	<25	<25	85	64	77				180	178	281	195	83	447	130	132	134	200	69	144	150	36	120				1000	548	942
	NBR																			200	114	<25									
	SBL	300	240	166	115	28	<25	195	38	40	150	614	415	728	701	789	100	83	119	50	44	58	170	991	1195	280	235	401			
	SBR																						170	61	50						
Long-Term Year 2025 With Project	EBL	200	56	39	100	165	98				195	100	180	350	166	308	200	68	51	185	<25	<25	320	50	136						
	EBR																						630	<25	<25				240	43	149
	WBL	150	46	203	120	59	96	100	65	66	195	469	176	210	185	1195	200	63	108	400	424	433	400	315	361	310	118	212	280	189	147
	WBR													730	463	644				95	<25	<25	350	60	214				250	33	95
	NBL	150	<25	<25	85	67	77				180	178	281	195	129	482	130	132	134	200	69	144	150	37	121				1000	548	942
	NBR																			200	113	<25									
	SBL	300	319	166	115	28	<25	195	38	39	150	621	429	728	701	789	100	83	119	50	44	58	170	991	1195	280	235	401			
	SBR																						170	61	50						

MITIGATED LEVEL OF SERVICE TABLE

Cumulative Plus Project with Mitigations

	Intersection	Criteria	Cumulative Traffic				Cumulative + Project Traffic				Mitigated (Cum+Proj Traffic)			
			AM Peak		PM Peak		AM Peak		PM Peak		AM Peak		PM Peak	
			LOS	V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay
1	Lone Tree Way / Deer Valley Road	D	C	0.78	B	0.68	C	0.78	B	0.68	C	0.78	B	0.68
2	Deer Valley Road / Marita Drive	D	A	0.40	A	0.34	A	0.40	A	0.34	A	0.40	A	0.34
3	Deer Valley Road / Prewett Ranch Drive	D	B	0.65	B	0.62	B	0.65	B	0.62	B	0.65	B	0.62
4	Deer Valley Road / Wellness Way	D	A	0.51	B	0.62	A	0.51	B	0.62	A	0.51	B	0.62
5	Deer Valley Road / Kaiser Hospital	D	A	0.46	A	0.48	A	0.46	A	0.48	A	0.46	A	0.48
6	Deer Valley Road / Sand Creek Road	D	B	0.67	B	0.66	B	0.67	B	0.67	B	0.67	B	0.67
7	Kaiser Hospital / Sand Creek Road	D	A	0.32	A	0.43	A	0.32	A	0.43	A	0.32	A	0.43
8	PARK / Sand Creek Road	D	A	0.59	A	0.48	A	0.59	A	0.48	A	0.59	A	0.48
9	Project South Access / Sand Creek Road	D	A	0.16	A	0.19	A	0.18	A	0.21	A	0.18	A	0.21
10	Hillcrest Avenue / Sand Creek Road	D	A	0.41	A	0.59	C	0.41	A	0.59	C	0.41	A	0.59
11	Hillcrest Avenue / Project East Access	D	A	0.50	A	0.46	A	0.54	A	0.49	A	0.54	A	0.49
12	SR-4 Bypass NB Ramps (Jeffrey Way) / Lone Tree Way	D	A	0.47	A	0.59	A	0.48	B	0.60	A	0.48	B	0.60
13	Hillcrest Avenue / Vista Grande Drive	D	A	0.45	A	0.45	A	0.47	A	0.46	A	0.47	A	0.46
14	Hillcrest Avenue / Lone Tree Way	D	**F**	**1.08**	**F**	**1.19**	**F**	**1.10**	**F**	**1.20**	**E**	**0.92**	**E**	**0.90**
15	Vista Grande Drive / Lone Tree Way	D	A	0.55	B	0.69	A	0.55	B	0.69	A	0.55	B	0.69
16	Heidorn Ranch Road / Lone Tree Way	D	C	0.78	**E**	**0.92**	C	0.79	**E**	**0.92**	C	0.79	**E**	**0.92**
17	Canada Valley Road / Lone Tree Way	D	**F**	**1.06**	**F**	**1.19**	**F**	**1.06**	**F**	**1.19**	**F**	**1.06**	**F**	**1.19**
18	SR-4 Bypass SB Ramps / Lone Tree Way	D	C	0.75	**E**	**0.93**	C	0.75	**E**	**0.94**	B	0.65	D	0.83
19	SR-4 Bypass NB Ramps (Jeffrey Way) / Lone Tree Way	D	**E**	**0.92**	**F**	**1.07**	**E**	**0.92**	**F**	**1.07**	**E**	**0.92**	**F**	**1.07**
20	Heidorn Ranch Road / Sand Creek Road	D	A	0.30	A	0.30	A	0.30	A	0.30	A	0.30	A	0.30
21	SR-4 Bypass NB Ramps / Sand Creek Road	D	B	0.68	**D**	**0.86**	B	0.68	**D**	**0.86**	B	0.68	**D**	**0.86**

APPENDIX D

AIR QUALITY DATA

D-1: CALIFORNIA LINE SOURCE DISPERSION MODEL DATA

D-2: URBAN EMISSIONS MODEL DATA

D-3: GREENHOUSE GAS EMISSIONS WORKSHEET

APPENDIX D-1

CALIFORNIA LINE SOURCE DISPERSION MODEL DATA

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Aviano
RUN: 2011nP-01 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	278.	2.3	.2	.0	.0	.0	.0	.0	1.0	.5
2. NW	98.	2.0	.0	.0	.0	.1	.0	.0	.0	.3
3. SW	79.	2.4	.1	.0	.0	.0	.2	.0	.3	1.0
4. NE	257.	1.8	.0	.2	.0	.0	.0	.0	.4	.0
5. ES mdblk	279.	2.3	.0	.0	.0	.0	.0	.0	.0	1.5
6. WN mdblk	98.	1.7	.0	.0	.0	.0	.0	.0	.3	.2
7. WS mdblk	82.	2.1	.0	.0	.0	.0	.0	.0	1.3	.1
8. EN mdblk	261.	2.0	.0	.0	.0	.0	.0	.0	.2	.2
9. SE mdblk	351.	1.1	.4	.0	.1	.0	.0	.0	.0	.0
10. NW mdblk	171.	1.0	.0	.0	.0	.3	.0	.2	.0	.0
11. SW mdblk	8.	1.1	.0	.0	.0	.0	.4	.0	.0	.0
12. NE mdblk	187.	1.0	.0	.4	.0	.0	.0	.0	.0	.0
13. ES blk	277.	1.4	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	97.	1.2	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	84.	1.2	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	263.	1.3	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	354.	.8	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	174.	.7	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	7.	.9	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	186.	.8	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Aviano
RUN: 2011nP-01 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.1
2. NW	.0	.9	.2	.1	.0	.0	.0	.0	.0	.2	.0	.0
3. SW	.0	.3	.0	.1	.0	.0	.0	.0	.0	.0	.1	.0
4. NE	.0	.4	.5	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	.0	.3	.1	.1	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.1	.7	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.2	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	1.1	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.9	.3	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.3	.0	.0	.7
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.8	.0	.0	.2
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.3	.7	.0
17. SE blk	.0	.0	.0	.0	.4	.0	.0	.1	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.1	.3	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.2	.0	.0	.5	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.4	.1	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Aviano
RUN: 2011nP-01 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S Z0= 100. CM ALT= 91. (M)
BRG= WORST CASE VD= .0 CM/S
CLAS= 7 (G) VS= .0 CM/S
MIXH= 1000. M AMB= .0 PPM
SIGTH= 10. DEGREES TEMP= 10.0 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Deer Val NBA	12	-150	12	0	AG	599	5.2	.0	13.5
B. Deer Val NBD	12	0	12	150	AG	774	3.6	.0	10.0
C. Deer Val NBL	9	-150	0	0	AG	295	6.4	.0	10.0
D. Deer Val SBA	-9	150	-9	0	AG	368	5.1	.0	13.5
E. Deer Val SBD	-9	0	-9	-150	AG	861	3.7	.0	10.0
F. Deer Val SBL	-5	150	0	0	AG	312	7.0	.0	10.0
G. Lone Tre EBA	-150	-9	0	-9	AG	1587	6.7	.0	13.5
H. Lone Tre EBD	0	-9	150	-9	AG	1886	6.1	.0	10.0
I. Lone Tre EBL	-150	-5	0	0	AG	122	6.4	.0	10.0
J. Lone Tre WBA	150	9	0	9	AG	1345	6.4	.0	13.5
K. Lone Tre WBD	0	9	-150	9	AG	1366	4.1	.0	10.0
L. Lone Tre WBL	150	5	0	0	AG	259	6.9	.0	10.0
M. Deer Va NBAX	12	-750	12	-150	AG	894	3.3	.0	13.5
N. Deer Va NBDX	12	150	12	750	AG	774	3.3	.0	10.0
O. Deer Va SBAX	-9	750	-9	150	AG	680	3.3	.0	13.5
P. Deer Va SBDX	-9	-150	-9	-750	AG	861	3.3	.0	10.0
Q. Lone Tr EBAX	-750	-9	-150	-9	AG	1709	3.3	.0	13.5
R. Lone Tr EBDX	150	-9	750	-9	AG	1886	3.3	.0	10.0
S. Lone Tr WBAX	750	9	150	9	AG	1604	3.3	.0	13.5
T. Lone Tr WBDX	-150	9	-750	9	AG	1366	3.3	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Aviano
RUN: 2011nP-01 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	21	-15	1.8
2. NW	-17	15	1.8
3. SW	-15	-17	1.8
4. NE	19	17	1.8
5. ES mdblk	150	-15	1.8
6. WN mdblk	-150	15	1.8
7. WS mdblk	-150	-17	1.8
8. EN mdblk	150	17	1.8
9. SE mdblk	21	-150	1.8
10. NW mdblk	-17	150	1.8
11. SW mdblk	-15	-150	1.8
12. NE mdblk	19	150	1.8
13. ES blk	600	-15	1.8
14. WN blk	-600	15	1.8
15. WS blk	-600	-17	1.8
16. EN blk	600	17	1.8
17. SE blk	21	-600	1.8
18. NW blk	-17	600	1.8
19. SW blk	-15	-600	1.8
20. NE blk	19	600	1.8

JOB: Aviano
RUN: 2011nP-02 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	350.	.8	.1	.4	.0	.1	.0	.0	.0	.0
2. NW	8.	.8	.0	.0	.0	.5	.0	.0	.0	.0
3. SW	7.	.9	.0	.0	.0	.5	.0	.0	.0	.0
4. NE	187.	.9	.5	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	282.	.2	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	93.	.2	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	85.	.2	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	262.	.3	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	352.	.9	.5	.0	.0	.1	.0	.0	.0	.0
10. NW mdblk	172.	.9	.1	.0	.0	.5	.0	.0	.0	.0
11. SW mdblk	7.	.8	.0	.0	.0	.0	.4	.0	.0	.0
12. NE mdblk	187.	.8	.0	.5	.0	.0	.0	.0	.0	.0
13. ES blk	276.	.2	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	93.	.1	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	86.	.1	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	265.	.2	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	354.	.7	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	173.	.7	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	7.	.7	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	187.	.8	.0	.0	.0	.0	.0	.0	.0	.0

JOB: Aviano
RUN: 2011nP-02 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0
3. SW	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0
4. NE	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0
5. ES mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0
17. SE blk	.0	.0	.0	.0	.4	.0	.0	.1	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.2	.4	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.2	.0	.0	.4	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.5	.2	.0	.0	.0	.0	.0

JOB: Aviano
RUN: 2011nP-02 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S Z0= 100. CM ALT= 91. (M)
BRG= WORST CASE VD= .0 CM/S
CLAS= 7 (G) VS= .0 CM/S
MIXH= 1000. M AMB= .0 PPM
SIGTH= 10. DEGREES TEMP= 10.0 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Deer Val NBA	9	-150	9	0	AG	834	5.0	.0	13.5
B. Deer Val NBD	9	0	9	150	AG	966	3.5	.0	10.0
C. Deer Val NBL	5	-150	0	0	AG	14	6.4	.0	10.0
D. Deer Val SBA	-9	150	-9	0	AG	824	5.0	.0	13.5
E. Deer Val SBD	-9	0	-9	-150	AG	846	3.5	.0	10.0
F. Deer Val SBL	-5	150	0	0	AG	32	6.4	.0	10.0
G. Marita D EBA	-150	-7	0	-7	AG	5	5.9	.0	10.0
H. Marita D EBD	0	-7	150	-7	AG	37	3.8	.0	10.0
I. Marita D EBL	-150	-5	0	0	AG	11	6.4	.0	10.0
J. Marita D WBA	150	7	0	7	AG	130	5.9	.0	10.0
K. Marita D WBD	0	7	-150	7	AG	39	3.8	.0	10.0
L. Marita D WBL	150	5	0	0	AG	38	6.4	.0	10.0
M. Deer Va NBAX	9	-750	9	-150	AG	848	3.3	.0	13.5
N. Deer Va NBDX	9	150	9	750	AG	966	3.3	.0	10.0
O. Deer Va SBAX	-9	750	-9	150	AG	856	3.3	.0	13.5
P. Deer Va SBDX	-9	-150	-9	-750	AG	846	3.3	.0	10.0
Q. Marita EBAX	-750	-7	-150	-7	AG	16	3.3	.0	10.0
R. Marita EBDX	150	-7	750	-7	AG	37	3.3	.0	10.0
S. Marita WBAX	750	7	150	7	AG	168	3.3	.0	10.0
T. Marita WBDX	-150	7	-750	7	AG	39	3.3	.0	10.0

JOB: Aviano
RUN: 2011nP-02 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	17	-14	1.8
2. NW	-17	14	1.8
3. SW	-15	-14	1.8
4. NE	15	14	1.8
5. ES mdblk	150	-14	1.8
6. WN mdblk	-150	14	1.8
7. WS mdblk	-150	-14	1.8
8. EN mdblk	150	14	1.8
9. SE mdblk	17	-150	1.8
10. NW mdblk	-17	150	1.8
11. SW mdblk	-15	-150	1.8
12. NE mdblk	15	150	1.8
13. ES blk	600	-14	1.8
14. WN blk	-600	14	1.8
15. WS blk	-600	-14	1.8
16. EN blk	600	14	1.8
17. SE blk	17	-600	1.8
18. NW blk	-17	600	1.8
19. SW blk	-15	-600	1.8
20. NE blk	15	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Aviano
RUN: 2011nP-03 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	350.	.9	.0	.3	.0	.1	.0	.0	.0	.0
2. NW	170.	.8	.1	.0	.0	.0	.3	.0	.0	.0
3. SW	7.	.9	.0	.0	.0	.4	.0	.0	.0	.0
4. NE	187.	.9	.5	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	277.	.4	.0	.0	.0	.0	.0	.0	.0	.2
6. WN mdblk	97.	.4	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	82.	.4	.0	.0	.0	.0	.0	.0	.1	.0
8. EN mdblk	264.	.4	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	352.	.9	.5	.0	.0	.1	.0	.0	.0	.0
10. NW mdblk	172.	.9	.1	.0	.0	.5	.0	.0	.0	.0
11. SW mdblk	7.	.8	.0	.0	.0	.0	.3	.0	.0	.0
12. NE mdblk	188.	.8	.0	.4	.0	.1	.0	.0	.0	.0
13. ES blk	276.	.4	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	96.	.3	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	84.	.3	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	264.	.3	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	354.	.6	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	174.	.7	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	6.	.6	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	187.	.7	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Aviano
RUN: 2011nP-03 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0
4. NE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.4	.0	.0	.1	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.1	.0	.0	.3	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.4	.2	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Aviano
RUN: 2011nP-03 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S Z0= 100. CM ALT= 91. (M)
BRG= WORST CASE VD= .0 CM/S
CLAS= 7 (G) VS= .0 CM/S
MIXH= 1000. M AMB= .0 PPM
SIGTH= 10. DEGREES TEMP= 10.0 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Deer Val NBA	9	-150	9	0	AG	709	5.4	.0	13.5
B. Deer Val NBD	9	0	9	150	AG	826	3.7	.0	10.0
C. Deer Val NBL	5	-150	0	0	AG	89	6.4	.0	10.0
D. Deer Val SBA	-9	150	-9	0	AG	688	5.4	.0	13.5
E. Deer Val SBD	-9	0	-9	-150	AG	647	3.6	.0	10.0
F. Deer Val SBL	-5	150	0	0	AG	147	6.4	.0	10.0
G. Mammoth EBA	-150	-7	0	-7	AG	139	5.1	.0	10.0
H. Mammoth EBD	0	-7	150	-7	AG	301	3.5	.0	10.0
I. Mammoth EBL	-150	-5	0	0	AG	84	6.4	.0	10.0
J. Mammoth WBA	150	7	0	7	AG	189	5.1	.0	10.0
K. Mammoth WBD	0	7	-150	7	AG	289	3.5	.0	10.0
L. Mammoth WBL	150	5	0	0	AG	18	6.4	.0	10.0
M. Deer Va NBAX	9	-750	9	-150	AG	798	3.3	.0	13.5
N. Deer Va NBDX	9	150	9	750	AG	826	3.3	.0	10.0
O. Deer Va SBAX	-9	750	-9	150	AG	835	3.3	.0	13.5
P. Deer Va SBDX	-9	-150	-9	-750	AG	647	3.3	.0	10.0
Q. Mammoth EBAX	-750	-7	-150	-7	AG	223	3.3	.0	10.0
R. Mammoth EBDX	150	-7	750	-7	AG	301	3.3	.0	10.0
S. Mammoth WBAX	750	7	150	7	AG	207	3.3	.0	10.0
T. Mammoth WBDX	-150	7	-750	7	AG	289	3.3	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Aviano
RUN: 2011nP-03 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	17	-14	1.8
2. NW	-17	14	1.8
3. SW	-15	-14	1.8
4. NE	15	14	1.8
5. ES mdblk	150	-14	1.8
6. WN mdblk	-150	14	1.8
7. WS mdblk	-150	-14	1.8
8. EN mdblk	150	14	1.8
9. SE mdblk	17	-150	1.8
10. NW mdblk	-17	150	1.8
11. SW mdblk	-15	-150	1.8
12. NE mdblk	15	150	1.8
13. ES blk	600	-14	1.8
14. WN blk	-600	14	1.8
15. WS blk	-600	-14	1.8
16. EN blk	600	14	1.8
17. SE blk	17	-600	1.8
18. NW blk	-17	600	1.8
19. SW blk	-15	-600	1.8
20. NE blk	15	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Aviano
RUN: 2011nP-04 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	350.	.7	.1	.3	.0	.0	.0	.0	.0	.0
2. NW	8.	.7	.0	.0	.0	.4	.0	.0	.0	.0
3. SW	8.	.7	.0	.0	.0	.4	.0	.0	.0	.0
4. NE	187.	.8	.5	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	282.	.2	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	93.	.1	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	87.	.1	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	259.	.2	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	352.	.8	.5	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	172.	.8	.1	.0	.0	.4	.0	.0	.0	.0
11. SW mdblk	8.	.6	.0	.0	.0	.0	.3	.0	.0	.0
12. NE mdblk	187.	.7	.0	.4	.0	.0	.0	.0	.0	.0
13. ES blk	276.	.1	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	90.	.0	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	88.	.0	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	264.	.1	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	354.	.6	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	173.	.6	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	7.	.5	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	186.	.6	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Aviano
RUN: 2011nP-04 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0
3. SW	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0
4. NE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.4	.0	.0	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.2	.0	.0	.3	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.4	.1	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Aviano
RUN: 2011nP-04 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S Z0= 100. CM ALT= 91. (M)
BRG= WORST CASE VD= .0 CM/S
CLAS= 7 (G) VS= .0 CM/S
MIXH= 1000. M AMB= .0 PPM
SIGTH= 10. DEGREES TEMP= 10.0 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Deer Val NBA	9	-150	9	0	AG	808	5.0	.0	13.5
B. Deer Val NBD	9	0	9	150	AG	844	3.5	.0	10.0
C. Deer Val NBL	5	-150	0	0	AG	0	3.3	.0	10.0
D. Deer Val SBA	-11	150	-11	0	AG	561	5.2	.0	10.0
E. Deer Val SBD	-11	0	-11	-150	AG	564	3.6	.0	10.0
F. Deer Val SBL	-9	150	0	0	AG	69	6.4	.0	10.0
G. Wellness EBA	-150	-7	0	-7	AG	0	3.3	.0	10.0
H. Wellness EBD	0	-7	150	-7	AG	74	3.8	.0	10.0
I. Wellness EBL	-150	-5	0	0	AG	0	3.3	.0	10.0
J. Wellness WBA	150	7	0	7	AG	41	5.9	.0	10.0
K. Wellness WBD	0	7	-150	7	AG	0	3.3	.0	10.0
L. Wellness WBL	150	5	0	0	AG	3	6.4	.0	10.0
M. Deer Va NBAX	9	-750	9	-150	AG	808	3.3	.0	13.5
N. Deer Va NBDX	9	150	9	750	AG	844	3.3	.0	10.0
O. Deer Va SBAX	-11	750	-11	150	AG	630	3.3	.0	10.0
P. Deer Va SBDX	-11	-150	-11	-750	AG	564	3.3	.0	10.0
Q. Wellnes EBAX	-750	-7	-150	-7	AG	0	3.3	.0	10.0
R. Wellnes EBDX	150	-7	750	-7	AG	74	3.3	.0	10.0
S. Wellnes WBAX	750	7	150	7	AG	44	3.3	.0	10.0
T. Wellnes WBDX	-150	7	-750	7	AG	0	3.3	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Aviano
RUN: 2011nP-04 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	17	-14	1.8
2. NW	-17	14	1.8
3. SW	-17	-14	1.8
4. NE	15	14	1.8
5. ES mdblk	150	-14	1.8
6. WN mdblk	-150	14	1.8
7. WS mdblk	-150	-14	1.8
8. EN mdblk	150	14	1.8
9. SE mdblk	17	-150	1.8
10. NW mdblk	-17	150	1.8
11. SW mdblk	-17	-150	1.8
12. NE mdblk	15	150	1.8
13. ES blk	600	-14	1.8
14. WN blk	-600	14	1.8
15. WS blk	-600	-14	1.8
16. EN blk	600	14	1.8
17. SE blk	17	-600	1.8
18. NW blk	-17	600	1.8
19. SW blk	-17	-600	1.8
20. NE blk	15	600	1.8

JOB: Aviano
RUN: 2011nP-05 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	275.	.1	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	95.	.1	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	276.	.1	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	96.	.1	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	275.	.1	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	95.	.1	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	85.	.1	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	265.	.1	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	291.	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	111.	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	69.	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	249.	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	275.	.1	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	95.	.1	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	85.	.1	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	265.	.1	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	359.	.0	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	179.	.0	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	360.	.0	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	180.	.0	.0	.0	.0	.0	.0	.0	.0	.0

JOB: Aviano
RUN: 2011nP-05 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

JOB: Aviano
RUN: 2011nP-05 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S
BRG= WORST CASE
CLAS= 7 (G)
MIXH= 1000. M
SIGTH= 10. DEGREES
Z0= 100. CM
VD= .0 CM/S
VS= .0 CM/S
AMB= .0 PPM
TEMP= 10.0 DEGREE (C)
ALT= 91. (M)

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Project NBA	0	-150	0	0	AG	0	3.3	.0	10.0
B. Project NBD	0	0	0	150	AG	0	3.3	.0	10.0
C. Project NBL	2	-150	0	0	AG	0	3.3	.0	10.0
D. Project SBA	0	150	0	0	AG	0	3.3	.0	10.0
E. Project SBD	0	0	0	-150	AG	0	3.3	.0	10.0
F. Project SBL	-2	150	0	0	AG	0	3.3	.0	10.0
G. Sand Cre EBA	-150	-2	0	-2	AG	80	4.7	.0	10.0
H. Sand Cre EBD	0	-2	150	-2	AG	80	3.4	.0	10.0
I. Sand Cre EBL	-150	-2	0	0	AG	0	3.3	.0	10.0
J. Sand Cre WBA	150	2	0	2	AG	80	4.7	.0	10.0
K. Sand Cre WBD	0	2	-150	2	AG	80	3.4	.0	10.0
L. Sand Cre WBL	150	2	0	0	AG	0	3.3	.0	10.0
M. Project NBAX	0	-750	0	-150	AG	0	3.3	.0	10.0
N. Project NBDX	0	150	0	750	AG	0	3.3	.0	10.0
O. Project SBAX	0	750	0	150	AG	0	3.3	.0	10.0
P. Project SBDX	0	-150	0	-750	AG	0	3.3	.0	10.0
Q. Sand Cr EBAX	-750	-2	-150	-2	AG	80	3.3	.0	10.0
R. Sand Cr EBDX	150	-2	750	-2	AG	80	3.3	.0	10.0
S. Sand Cr WBAX	750	2	150	2	AG	80	3.3	.0	10.0
T. Sand Cr WBDX	-150	2	-750	2	AG	80	3.3	.0	10.0

JOB: Aviano
RUN: 2011nP-05 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	7	-8	1.8
2. NW	-7	8	1.8
3. SW	-7	-8	1.8
4. NE	7	8	1.8
5. ES mdblk	150	-8	1.8
6. WN mdblk	-150	8	1.8
7. WS mdblk	-150	-8	1.8
8. EN mdblk	150	8	1.8
9. SE mdblk	7	-150	1.8
10. NW mdblk	-7	150	1.8
11. SW mdblk	-7	-150	1.8
12. NE mdblk	7	150	1.8
13. ES blk	600	-8	1.8
14. WN blk	-600	8	1.8
15. WS blk	-600	-8	1.8
16. EN blk	600	8	1.8
17. SE blk	7	-600	1.8
18. NW blk	-7	600	1.8
19. SW blk	-7	-600	1.8
20. NE blk	7	600	1.8

JOB: Aviano
RUN: 2011PP-06 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	354.	.1	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	6.	.2	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	6.	.2	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	263.	.2	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	273.	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	99.	.1	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	79.	.2	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	268.	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	357.	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	171.	.1	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	1.	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	191.	.1	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	273.	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	95.	.1	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	84.	.1	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	271.	.0	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	358.	.0	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	175.	.1	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	359.	.0	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	186.	.1	.0	.0	.0	.0	.0	.0	.0	.0

JOB: Aviano
RUN: 2011PP-06 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

JOB: Aviano
RUN: 2011PP-06 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S Z0= 100. CM ALT= 91. (M)
BRG= WORST CASE VD= .0 CM/S
CLAS= 7 (G) VS= .0 CM/S
MIXH= 1000. M AMB= .0 PPM
SIGTH= 10. DEGREES TEMP= 10.0 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Hillcres NBA	0	-150	0	0	AG	0	3.3	.0	10.0
B. Hillcres NBD	0	0	0	150	AG	93	3.8	.0	10.0
C. Hillcres NBL	2	-150	0	0	AG	0	3.3	.0	10.0
D. Hillcres SBA	-5	150	-5	0	AG	92	5.9	.0	10.0
E. Hillcres SBD	-5	0	-5	-150	AG	0	3.3	.0	10.0
F. Hillcres SBL	-5	150	0	0	AG	1	6.4	.0	10.0
G. Sand Cre EBA	-150	-5	0	-5	AG	0	3.3	.0	10.0
H. Sand Cre EBD	0	-5	150	-5	AG	1	3.4	.0	10.0
I. Sand Cre EBL	-150	-5	0	0	AG	93	6.4	.0	10.0
J. Sand Cre WBA	150	4	0	4	AG	0	3.3	.0	10.0
K. Sand Cre WBD	0	4	-150	4	AG	92	3.4	.0	10.0
L. Sand Cre WBL	150	2	0	0	AG	0	3.3	.0	10.0
M. Hillcre NBAX	0	-750	0	-150	AG	0	3.3	.0	10.0
N. Hillcre NBDX	0	150	0	750	AG	93	3.3	.0	10.0
O. Hillcre SBAX	-5	750	-5	150	AG	93	3.3	.0	10.0
P. Hillcre SBDX	-5	-150	-5	-750	AG	0	3.3	.0	10.0
Q. Sand Cr EBAX	-750	-5	-150	-5	AG	93	3.3	.0	10.0
R. Sand Cr EBDX	150	-5	750	-5	AG	1	3.3	.0	10.0
S. Sand Cr WBAX	750	4	150	4	AG	0	3.3	.0	10.0
T. Sand Cr WBDX	-150	4	-750	4	AG	92	3.3	.0	10.0

JOB: Aviano
RUN: 2011PP-06 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	7	-12	1.8
2. NW	-12	10	1.8
3. SW	-12	-12	1.8
4. NE	7	10	1.8
5. ES mdblk	150	-12	1.8
6. WN mdblk	-150	10	1.8
7. WS mdblk	-150	-12	1.8
8. EN mdblk	150	10	1.8
9. SE mdblk	7	-150	1.8
10. NW mdblk	-12	150	1.8
11. SW mdblk	-12	-150	1.8
12. NE mdblk	7	150	1.8
13. ES blk	600	-12	1.8
14. WN blk	-600	10	1.8
15. WS blk	-600	-12	1.8
16. EN blk	600	10	1.8
17. SE blk	7	-600	1.8
18. NW blk	-12	600	1.8
19. SW blk	-12	-600	1.8
20. NE blk	7	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Aviano
RUN: 2011nP-07 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	186.	.1	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	6.	.1	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	6.	.1	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	186.	.1	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	339.	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	160.	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	21.	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	201.	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	354.	.1	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	174.	.1	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	6.	.1	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	186.	.1	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	268.	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	94.	.0	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	82.	.0	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	266.	.0	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	355.	.1	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	175.	.1	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	5.	.1	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	185.	.1	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Aviano
RUN: 2011nP-07 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Aviano
RUN: 2011nP-07 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S Z0= 100. CM ALT= 91. (M)
BRG= WORST CASE VD= .0 CM/S
CLAS= 7 (G) VS= .0 CM/S
MIXH= 1000. M AMB= .0 PPM
SIGTH= 10. DEGREES TEMP= 10.0 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Hillcres NBA	5	-150	5	0	AG	80	4.7	.0	13.5
B. Hillcres NBD	5	0	5	150	AG	80	3.4	.0	10.0
C. Hillcres NBL	2	-150	0	0	AG	0	3.3	.0	10.0
D. Hillcres SBA	-7	150	-7	0	AG	81	4.7	.0	10.0
E. Hillcres SBD	-7	0	-7	-150	AG	81	3.4	.0	10.0
F. Hillcres SBL	-5	150	0	0	AG	0	3.3	.0	10.0
G. Project EBA	-150	0	0	0	AG	0	3.3	.0	10.0
H. Project EBD	0	0	150	0	AG	0	3.3	.0	10.0
I. Project EBL	-150	-2	0	0	AG	0	3.3	.0	10.0
J. Project WBA	150	5	0	5	AG	0	3.3	.0	10.0
K. Project WBD	0	5	-150	5	AG	0	3.3	.0	10.0
L. Project WBL	150	5	0	0	AG	0	3.3	.0	10.0
M. Hillcre NBAX	5	-750	5	-150	AG	80	3.3	.0	13.5
N. Hillcre NBDX	5	150	5	750	AG	80	3.3	.0	10.0
O. Hillcre SBAX	-7	750	-7	150	AG	81	3.3	.0	10.0
P. Hillcre SBDX	-7	-150	-7	-750	AG	81	3.3	.0	10.0
Q. Project EBAX	-750	0	-150	0	AG	0	3.3	.0	10.0
R. Project EBDX	150	0	750	0	AG	0	3.3	.0	10.0
S. Project WBAX	750	5	150	5	AG	0	3.3	.0	10.0
T. Project WBDX	-150	5	-750	5	AG	0	3.3	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Aviano
RUN: 2011nP-07 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	14	-7	1.8
2. NW	-14	12	1.8
3. SW	-14	-7	1.8
4. NE	12	12	1.8
5. ES mdblk	150	-7	1.8
6. WN mdblk	-150	12	1.8
7. WS mdblk	-150	-7	1.8
8. EN mdblk	150	12	1.8
9. SE mdblk	14	-150	1.8
10. NW mdblk	-14	150	1.8
11. SW mdblk	-14	-150	1.8
12. NE mdblk	12	150	1.8
13. ES blk	600	-7	1.8
14. WN blk	-600	12	1.8
15. WS blk	-600	-7	1.8
16. EN blk	600	12	1.8
17. SE blk	14	-600	1.8
18. NW blk	-14	600	1.8
19. SW blk	-14	-600	1.8
20. NE blk	12	600	1.8

JOB: Aviano
RUN: 2011nP-08 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	352.	.3	.0	.1	.0	.0	.0	.0	.0	.0
2. NW	8.	.3	.0	.0	.0	.2	.0	.0	.0	.0
3. SW	6.	.4	.0	.0	.0	.2	.0	.0	.0	.0
4. NE	262.	.3	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	275.	.2	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	98.	.2	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	79.	.2	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	267.	.2	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	354.	.2	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	172.	.3	.0	.0	.0	.2	.0	.0	.0	.0
11. SW mdblk	5.	.2	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	190.	.3	.0	.1	.0	.0	.0	.0	.0	.0
13. ES blk	275.	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	96.	.2	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	84.	.2	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	267.	.0	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	354.	.2	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	174.	.3	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	5.	.2	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	187.	.3	.0	.0	.0	.0	.0	.0	.0	.0

JOB: Aviano
RUN: 2011nP-08 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0

JOB: Aviano
RUN: 2011nP-08 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S Z0= 100. CM ALT= 91. (M)
BRG= WORST CASE VD= .0 CM/S
CLAS= 7 (G) VS= .0 CM/S
MIXH= 1000. M AMB= .0 PPM
SIGTH= 10. DEGREES TEMP= 10.0 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Hillcres NBA	9	-150	9	0	AG	102	4.7	.0	13.5
B. Hillcres NBD	9	0	9	150	AG	239	3.4	.0	10.0
C. Hillcres NBL	5	-150	0	0	AG	2	6.4	.0	10.0
D. Hillcres SBA	-9	150	-9	0	AG	264	4.7	.0	13.5
E. Hillcres SBD	-9	0	-9	-150	AG	127	3.4	.0	10.0
F. Hillcres SBL	-5	150	0	0	AG	22	6.4	.0	10.0
G. Prewett EBA	-150	-7	0	-7	AG	26	5.9	.0	10.0
H. Prewett EBD	0	-7	150	-7	AG	46	3.8	.0	10.0
I. Prewett EBL	-150	-5	0	0	AG	126	6.4	.0	10.0
J. Prewett WBA	150	7	0	7	AG	22	5.9	.0	10.0
K. Prewett WBD	0	7	-150	7	AG	152	3.8	.0	10.0
L. Prewett WBL	150	5	0	0	AG	0	3.3	.0	10.0
M. Hillcre NBAX	9	-750	9	-150	AG	104	3.3	.0	13.5
N. Hillcre NBDX	9	150	9	750	AG	239	3.3	.0	10.0
O. Hillcre SBAX	-9	750	-9	150	AG	206	3.3	.0	13.5
P. Hillcre SBDX	-9	-150	-9	-750	AG	127	3.3	.0	10.0
Q. Prewett EBAX	-750	-7	-150	-7	AG	152	3.3	.0	10.0
R. Prewett EBDX	150	-7	750	-7	AG	46	3.3	.0	10.0
S. Prewett WBAX	750	7	150	7	AG	22	3.3	.0	10.0
T. Prewett WBDX	-150	7	-750	7	AG	152	3.3	.0	10.0

JOB: Aviano
RUN: 2011nP-08 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	17	-14	1.8
2. NW	-17	14	1.8
3. SW	-15	-14	1.8
4. NE	15	14	1.8
5. ES mdblk	150	-14	1.8
6. WN mdblk	-150	14	1.8
7. WS mdblk	-150	-14	1.8
8. EN mdblk	150	14	1.8
9. SE mdblk	17	-150	1.8
10. NW mdblk	-17	150	1.8
11. SW mdblk	-15	-150	1.8
12. NE mdblk	15	150	1.8
13. ES blk	600	-14	1.8
14. WN blk	-600	14	1.8
15. WS blk	-600	-14	1.8
16. EN blk	600	14	1.8
17. SE blk	17	-600	1.8
18. NW blk	-17	600	1.8
19. SW blk	-15	-600	1.8
20. NE blk	15	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Aviano
RUN: 2011nP-09 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	352.	.3	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	7.	.3	.0	.0	.0	.2	.0	.0	.0	.0
3. SW	7.	.3	.0	.0	.0	.2	.0	.0	.0	.0
4. NE	186.	.4	.2	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	279.	.2	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	92.	.1	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	88.	.1	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	260.	.2	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	354.	.3	.2	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	173.	.4	.0	.0	.0	.2	.0	.0	.0	.0
11. SW mdblk	7.	.3	.0	.0	.0	.0	.1	.0	.0	.0
12. NE mdblk	186.	.3	.0	.1	.0	.0	.0	.0	.0	.0
13. ES blk	276.	.2	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	90.	.0	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	89.	.0	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	264.	.2	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	354.	.3	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	174.	.3	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	6.	.3	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	186.	.3	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Aviano
RUN: 2011nP-09 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Aviano
RUN: 2011nP-09 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S Z0= 100. CM ALT= 91. (M)
BRG= WORST CASE VD= .0 CM/S
CLAS= 7 (G) VS= .0 CM/S
MIXH= 1000. M AMB= .0 PPM
SIGTH= 10. DEGREES TEMP= 10.0 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Hillcres NBA	5	-150	5	0	AG	246	4.7	.0	13.5
B. Hillcres NBD	5	0	5	150	AG	213	3.4	.0	10.0
C. Hillcres NBL	2	-150	0	0	AG	0	3.3	.0	10.0
D. Hillcres SBA	-7	150	-7	0	AG	229	4.7	.0	10.0
E. Hillcres SBD	-7	0	-7	-150	AG	281	3.4	.0	10.0
F. Hillcres SBL	-5	150	0	0	AG	64	6.4	.0	10.0
G. Vista Gr EBA	-150	0	0	0	AG	0	3.3	.0	10.0
H. Vista Gr EBD	0	0	150	0	AG	127	3.8	.0	10.0
I. Vista Gr EBL	-150	-2	0	0	AG	0	3.3	.0	10.0
J. Vista Gr WBA	150	5	0	5	AG	30	5.9	.0	10.0
K. Vista Gr WBD	0	5	-150	5	AG	0	3.3	.0	10.0
L. Vista Gr WBL	150	5	0	0	AG	52	6.4	.0	10.0
M. Hillcre NBAX	5	-750	5	-150	AG	246	3.3	.0	13.5
N. Hillcre NBDX	5	150	5	750	AG	213	3.3	.0	10.0
O. Hillcre SBAX	-7	750	-7	150	AG	293	3.3	.0	10.0
P. Hillcre SBDX	-7	-150	-7	-750	AG	281	3.3	.0	10.0
Q. Vista G EBAX	-750	0	-150	0	AG	0	3.3	.0	10.0
R. Vista G EBDX	150	0	750	0	AG	127	3.3	.0	10.0
S. Vista G WBAX	750	5	150	5	AG	82	3.3	.0	10.0
T. Vista G WBDX	-150	5	-750	5	AG	0	3.3	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Aviano
RUN: 2011nP-09 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	14	-7	1.8
2. NW	-14	12	1.8
3. SW	-14	-7	1.8
4. NE	12	12	1.8
5. ES mdblk	150	-7	1.8
6. WN mdblk	-150	12	1.8
7. WS mdblk	-150	-7	1.8
8. EN mdblk	150	12	1.8
9. SE mdblk	14	-150	1.8
10. NW mdblk	-14	150	1.8
11. SW mdblk	-14	-150	1.8
12. NE mdblk	12	150	1.8
13. ES blk	600	-7	1.8
14. WN blk	-600	12	1.8
15. WS blk	-600	-7	1.8
16. EN blk	600	12	1.8
17. SE blk	14	-600	1.8
18. NW blk	-14	600	1.8
19. SW blk	-14	-600	1.8
20. NE blk	12	600	1.8

JOB: Aviano
RUN: 201lnP-10 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG [DEG]	FRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	78.	2.4	.0	.0	.0	.0	.0	.0	.0	1.7
2. NW	98.	2.6	.0	.1	.0	.0	.0	.2	.0	.3
3. SW	79.	2.3	.0	.0	.0	.0	.0	.0	.3	1.2
4. NE	257.	2.3	.0	.3	.0	.0	.0	.2	.4	.0
5. ES mdblk	280.	2.7	.0	.0	.0	.0	.0	.0	.0	1.8
6. WN mdblk	97.	1.9	.0	.0	.0	.0	.0	.0	.2	.3
7. WS mdblk	82.	2.3	.0	.0	.0	.0	.0	.0	1.3	.1
8. EN mdblk	261.	2.5	.0	.0	.0	.0	.0	.0	.2	.3
9. SE mdblk	355.	.9	.0	.0	.0	.0	.0	.1	.0	.1
10. NW mdblk	165.	1.2	.0	.2	.0	.2	.0	.5	.0	.1
11. SW mdblk	6.	.9	.0	.0	.0	.0	.2	.1	.0	.0
12. NE mdblk	190.	1.2	.0	.5	.0	.0	.0	.3	.1	.0
13. ES blk	277.	1.6	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	96.	1.2	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	83.	1.3	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	263.	1.4	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	355.	.5	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	173.	1.0	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	5.	.5	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	187.	1.0	.0	.0	.0	.0	.0	.0	.0	.0

JOB: Aviano
RUN: 201lnP-10 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.4	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0
2. NW	.0	1.3	.2	.0	.0	.0	.0	.0	.0	.2	.1	.0
3. SW	.0	.4	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0
4. NE	.1	.5	.6	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	.0	.4	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.2	.9	.0	.0	.0	.0	.0	.0	.1	.0	.0
7. WS mdblk	.2	.3	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	1.6	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.3	.0
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.3	.0	.0	.7
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.8	.0	.0	.2
17. SE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.3	.9	.0
18. NW blk	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.5	.2	.0	.0	.0	.0	.0

JOB: Aviano
RUN: 201lnP-10 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S Z0= 100. CM ALT= 91. (M)
BRG= WORST CASE VD= .0 CM/S
CLAS= 7 (G) VS= .0 CM/S
MIXH= 1000. M AMB= .0 PPM
SIGTH= 10. DEGREES TEMP= 10.0 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Hillcres NBA	9	-150	9	0	AG	105	5.1	.0	13.5
B. Hillcres NBD	9	0	9	150	AG	1012	3.8	.0	10.0
C. Hillcres NBL	5	-150	0	0	AG	111	6.4	.0	10.0
D. Hillcres SBA	-9	150	-9	0	AG	242	5.1	.0	13.5
E. Hillcres SBD	-9	0	-9	-150	AG	295	3.5	.0	10.0
F. Hillcres SBL	-5	150	0	0	AG	848	7.0	.0	10.0
G. Lone Tre EBA	-150	-9	0	-9	AG	1535	6.7	.0	13.5
H. Lone Tre EBD	0	-9	150	-9	AG	2312	6.1	.0	10.0
I. Lone Tre EBL	-150	-5	0	0	AG	202	6.9	.0	10.0
J. Lone Tre WBA	150	9	0	9	AG	1883	7.0	.0	13.5
K. Lone Tre WBD	0	9	-150	9	AG	1456	4.7	.0	10.0
L. Lone Tre WBL	150	5	0	0	AG	69	6.4	.0	10.0
M. Hillcre NBAX	9	-750	9	-150	AG	216	3.3	.0	13.5
N. Hillcre NBDX	9	150	9	750	AG	1012	3.3	.0	10.0
O. Hillcre SBAX	-9	750	-9	150	AG	1090	3.3	.0	13.5
P. Hillcre SBDX	-9	-150	-9	-750	AG	295	3.3	.0	10.0
Q. Lone Tr EBAX	-750	-9	-150	-9	AG	1817	3.3	.0	13.5
R. Lone Tr EBDX	150	-9	750	-9	AG	2312	3.3	.0	10.0
S. Lone Tr WBAX	750	9	150	9	AG	1952	3.3	.0	13.5
T. Lone Tr WBDX	-150	9	-750	9	AG	1456	3.3	.0	10.0

JOB: Aviano
RUN: 201lnP-10 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	17	-15	1.8
2. NW	-17	15	1.8
3. SW	-15	-17	1.8
4. NE	15	17	1.8
5. ES mdblk	150	-15	1.8
6. WN mdblk	-150	15	1.8
7. WS mdblk	-150	-17	1.8
8. EN mdblk	150	17	1.8
9. SE mdblk	17	-150	1.8
10. NW mdblk	-17	150	1.8
11. SW mdblk	-15	-150	1.8
12. NE mdblk	15	150	1.8
13. ES blk	600	-15	1.8
14. WN blk	-600	15	1.8
15. WS blk	-600	-17	1.8
16. EN blk	600	17	1.8
17. SE blk	17	-600	1.8
18. NW blk	-17	600	1.8
19. SW blk	-15	-600	1.8
20. NE blk	15	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Aviano
RUN: 2011nP-11 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	278.	2.4	.0	.0	.0	.0	.0	.0	1.5	.3
2. NW	98.	2.2	.0	.0	.0	.0	.0	.0	.0	.2
3. SW	280.	2.2	.0	.0	.0	.0	.0	.0	1.7	.0
4. NE	100.	2.1	.0	.0	.0	.0	.0	.0	.0	.2
5. ES mdblk	279.	2.2	.0	.0	.0	.0	.0	.0	.1	1.3
6. WN mdblk	99.	2.0	.0	.0	.0	.0	.0	.0	.4	.2
7. WS mdblk	81.	2.5	.0	.0	.0	.0	.0	.0	1.8	.0
8. EN mdblk	261.	2.4	.0	.0	.0	.0	.0	.0	.3	.2
9. SE mdblk	352.	.6	.2	.0	.0	.0	.0	.0	.1	.0
10. NW mdblk	174.	.5	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	8.	.6	.0	.0	.0	.0	.1	.0	.0	.0
12. NE mdblk	185.	.5	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	277.	1.5	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	97.	1.4	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	83.	1.4	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	263.	1.4	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	354.	.4	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	175.	.3	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	6.	.4	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	185.	.3	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Aviano
RUN: 2011nP-11 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.2	.0	.0	.0	.0	.0	.1	.0	.0	.2
2. NW	.0	1.3	.2	.0	.0	.0	.0	.0	.0	.2	.1	.0
3. SW	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.2
4. NE	.0	1.5	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0
5. ES mdblk	.0	.3	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.1	1.1	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.3	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	1.5	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.3	.0
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.3	.0	.0	.9
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.3
17. SE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.3	.9	.0
18. NW blk	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Aviano
RUN: 2011nP-11 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S Z0= 100. CM ALT= 91. (M)
BRG= WORST CASE VD= .0 CM/S
CLAS= 7 (G) VS= .0 CM/S
MIXH= 1000. M AMB= .0 PPM
SIGTH= 10. DEGREES TEMP= 10.0 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Vista Gr NBA	7	-150	7	0	AG	157	5.9	.0	10.0
B. Vista Gr NBD	7	0	7	150	AG	128	3.8	.0	10.0
C. Vista Gr NBL	5	-150	0	0	AG	51	6.4	.0	10.0
D. Vista Gr SBA	-7	150	-7	0	AG	45	5.9	.0	10.0
E. Vista Gr SBD	-7	0	-7	-150	AG	214	3.9	.0	10.0
F. Vista Gr SBL	-5	150	0	0	AG	40	6.4	.0	10.0
G. Lone Tre EBA	-150	-9	0	-9	AG	2152	6.8	.0	13.5
H. Lone Tre EBD	0	-9	150	-9	AG	2245	4.8	.0	10.0
I. Lone Tre EBL	-150	-5	0	0	AG	46	6.4	.0	10.0
J. Lone Tre WBA	150	9	0	9	AG	1838	6.8	.0	13.5
K. Lone Tre WBD	0	9	-150	9	AG	1869	4.8	.0	10.0
L. Lone Tre WBL	150	5	0	0	AG	127	6.4	.0	10.0
M. Vista G NBAX	7	-750	7	-150	AG	208	3.3	.0	10.0
N. Vista G NBDX	7	150	7	750	AG	128	3.3	.0	10.0
O. Vista G SBAX	-7	750	-7	150	AG	85	3.3	.0	10.0
P. Vista G SBDX	-7	-150	-7	-750	AG	214	3.3	.0	10.0
Q. Lone Tr EBAX	-750	-9	-150	-9	AG	2198	3.3	.0	13.5
R. Lone Tr EBDX	150	-9	750	-9	AG	2245	3.3	.0	10.0
S. Lone Tr WBAX	750	9	150	9	AG	1965	3.3	.0	13.5
T. Lone Tr WBDX	-150	9	-750	9	AG	1869	3.3	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Aviano
RUN: 2011nP-11 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	14	-15	1.8
2. NW	-14	15	1.8
3. SW	-14	-17	1.8
4. NE	14	17	1.8
5. ES mdblk	150	-15	1.8
6. WN mdblk	-150	15	1.8
7. WS mdblk	-150	-17	1.8
8. EN mdblk	150	17	1.8
9. SE mdblk	14	-150	1.8
10. NW mdblk	-14	150	1.8
11. SW mdblk	-14	-150	1.8
12. NE mdblk	14	150	1.8
13. ES blk	600	-15	1.8
14. WN blk	-600	15	1.8
15. WS blk	-600	-17	1.8
16. EN blk	600	17	1.8
17. SE blk	14	-600	1.8
18. NW blk	-14	600	1.8
19. SW blk	-14	-600	1.8
20. NE blk	14	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Aviano
RUN: 2011nP-12 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	278.	2.3	.0	.0	.0	.0	.0	.0	1.4	.4
2. NW	98.	2.1	.0	.0	.0	.0	.0	.0	.0	.2
3. SW	280.	2.3	.0	.0	.0	.0	.0	.0	1.8	.0
4. NE	100.	2.1	.0	.0	.0	.0	.0	.0	.0	.2
5. ES mdblk	279.	2.1	.0	.0	.0	.0	.0	.0	.1	1.3
6. WN mdblk	99.	2.0	.0	.0	.0	.0	.0	.0	.4	.2
7. WS mdblk	81.	2.5	.0	.0	.0	.0	.0	.0	1.8	.0
8. EN mdblk	261.	2.3	.0	.0	.0	.0	.0	.0	.3	.2
9. SE mdblk	347.	.4	.0	.0	.0	.0	.0	.0	.2	.0
10. NW mdblk	176.	.4	.0	.0	.0	.0	.0	.0	.1	.0
11. SW mdblk	11.	.4	.0	.0	.0	.0	.0	.0	.0	.1
12. NE mdblk	185.	.4	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	277.	1.5	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	97.	1.4	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	83.	1.4	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	263.	1.3	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	355.	.3	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	178.	.2	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	5.	.3	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	183.	.2	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Aviano
RUN: 2011nP-12 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.2	.0	.0	.0	.0	.0	.1	.0	.0	.2
2. NW	.0	1.3	.2	.0	.0	.0	.0	.0	.0	.2	.1	.0
3. SW	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.2
4. NE	.0	1.5	.0	.0	.0	.0	.0	.0	.2	.0	.0	
5. ES mdblk	.0	.3	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.1	1.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.3	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	1.6	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.3	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.3	.0	.0	.9
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.3
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.3	.8	.0
17. SE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Aviano
RUN: 2011nP-12 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S Z0= 100. CM ALT= 91. (M)
BRG= WORST CASE VD= .0 CM/S
CLAS= 7 (G) VS= .0 CM/S
MIXH= 1000. M AMB= .0 PPM
SIGTH= 10. DEGREES TEMP= 10.0 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Heidorn NBA	11	-150	11	0	AG	24	5.9	.0	10.0
B. Heidorn NBD	11	0	11	150	AG	12	3.8	.0	10.0
C. Heidorn NBL	9	-150	0	0	AG	84	6.4	.0	10.0
D. Heidorn SBA	-7	150	-7	0	AG	0	3.3	.0	10.0
E. Heidorn SBD	-7	0	-7	-150	AG	82	3.8	.0	10.0
F. Heidorn SBL	-5	150	0	0	AG	9	6.4	.0	10.0
G. Lone Tre EBA	-150	-9	0	-9	AG	2205	6.8	.0	13.5
H. Lone Tre EBD	0	-9	150	-9	AG	2185	4.8	.0	10.0
I. Lone Tre EBL	-150	-5	0	0	AG	3	6.4	.0	10.0
J. Lone Tre WBA	150	9	0	9	AG	1863	6.8	.0	13.5
K. Lone Tre WBD	0	9	-150	9	AG	1939	4.8	.0	10.0
L. Lone Tre WBL	150	5	0	0	AG	30	6.4	.0	10.0
M. Heidorn NBAX	11	-750	11	-150	AG	108	3.3	.0	10.0
N. Heidorn NBDX	11	150	11	750	AG	12	3.3	.0	10.0
O. Heidorn SBAX	-7	750	-7	150	AG	9	3.3	.0	10.0
P. Heidorn SBDX	-7	-150	-7	-750	AG	82	3.3	.0	10.0
Q. Lone Tr EBAX	-750	-9	-150	-9	AG	2208	3.3	.0	13.5
R. Lone Tr EBDX	150	-9	750	-9	AG	2185	3.3	.0	10.0
S. Lone Tr WBAX	750	9	150	9	AG	1893	3.3	.0	13.5
T. Lone Tr WBDX	-150	9	-750	9	AG	1939	3.3	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Aviano
RUN: 2011nP-12 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	17	-15	1.8
2. NW	-14	15	1.8
3. SW	-14	-17	1.8
4. NE	17	17	1.8
5. ES mdblk	150	-15	1.8
6. WN mdblk	-150	15	1.8
7. WS mdblk	-150	-17	1.8
8. EN mdblk	150	17	1.8
9. SE mdblk	17	-150	1.8
10. NW mdblk	-14	150	1.8
11. SW mdblk	-14	-150	1.8
12. NE mdblk	17	150	1.8
13. ES blk	600	-15	1.8
14. WN blk	-600	15	1.8
15. WS blk	-600	-17	1.8
16. EN blk	600	17	1.8
17. SE blk	17	-600	1.8
18. NW blk	-14	600	1.8
19. SW blk	-14	-600	1.8
20. NE blk	17	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Aviano
RUN: 2011nP-13 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	279.	2.0	.1	.0	.0	.0	.1	.0	.9	.4
2. NW	98.	2.6	.0	.0	.0	.0	.0	.2	.0	.1
3. SW	76.	2.0	.0	.0	.0	.0	.2	.0	.3	.9
4. NE	257.	2.2	.0	.2	.0	.0	.0	.1	.3	.0
5. ES mdblk	280.	2.0	.0	.0	.0	.0	.0	.0	.0	1.3
6. WN mdblk	98.	2.0	.0	.0	.0	.0	.0	.0	.1	.2
7. WS mdblk	81.	2.1	.0	.0	.0	.0	.0	.0	1.2	.1
8. EN mdblk	260.	2.5	.0	.0	.0	.0	.0	.0	.2	.1
9. SE mdblk	353.	.9	.2	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	170.	1.1	.0	.0	.0	.2	.0	.4	.0	.1
11. SW mdblk	8.	1.1	.0	.0	.0	.0	.5	.0	.0	.0
12. NE mdblk	188.	1.1	.0	.4	.0	.0	.0	.1	.0	.0
13. ES blk	278.	1.6	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	97.	1.4	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	83.	1.4	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	262.	1.5	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	354.	.6	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	174.	.8	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	6.	.7	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	186.	.7	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Aviano
RUN: 2011nP-13 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.1	.0	.0	.0	.0	.0	.1	.0	.0	.2
2. NW	.0	1.4	.2	.1	.0	.0	.0	.0	.0	.3	.1	.0
3. SW	.0	.3	.0	.1	.0	.0	.0	.0	.0	.0	.1	.0
4. NE	.0	.6	.7	.0	.0	.0	.0	.0	.1	.0	.0	.0
5. ES mdblk	.0	.2	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.1	1.1	.0	.0	.0	.0	.0	.0	.1	.0	.0
7. WS mdblk	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	1.7	.0	.2	.0	.0	.0	.0	.0	.0	.1	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.1	.3	.0
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.9	.0	.0	.2
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.3	1.0	.0
17. SE blk	.0	.0	.0	.0	.0	.0	.0	.0	.3	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.0	.0	.0	.0	.3	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.3	.1	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Aviano
RUN: 2011nP-13 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S Z0= 100. CM ALT= 91. (M)
BRG= WORST CASE VD= .0 CM/S
CLAS= 7 (G) VS= .0 CM/S
MIXH= 1000. M AMB= .0 PPM
SIGTH= 10. DEGREES TEMP= 10.0 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Canada V NBA	12	-150	12	0	AG	290	5.9	.0	13.5
B. Canada V NBD	12	0	12	150	AG	646	4.3	.0	10.0
C. Canada V NBL	9	-150	0	0	AG	121	6.4	.0	10.0
D. Canada V SBA	-7	150	-7	0	AG	199	5.9	.0	10.0
E. Canada V SBD	-7	0	-7	-150	AG	532	6.4	.0	10.0
F. Canada V SBL	-5	150	0	0	AG	470	7.0	.0	10.0
G. Lone Tre EBA	-150	-14	0	-14	AG	2019	5.5	.0	17.0
H. Lone Tre EBD	0	-14	150	-14	AG	2598	4.2	.0	13.5
I. Lone Tre EBL	-150	-9	0	0	AG	189	6.4	.0	10.0
J. Lone Tre WBA	150	12	0	12	AG	1989	6.8	.0	13.5
K. Lone Tre WBD	0	12	-150	12	AG	1855	4.8	.0	10.0
L. Lone Tre WBL	150	9	0	0	AG	354	6.4	.0	10.0
M. Canada NBAX	12	-750	12	-150	AG	411	3.3	.0	13.5
N. Canada NBDX	12	150	12	750	AG	646	3.3	.0	10.0
O. Canada SBAX	-7	750	-7	150	AG	669	3.3	.0	10.0
P. Canada SBDX	-7	-150	-7	-750	AG	532	3.3	.0	10.0
Q. Lone Tr EBAX	-750	-14	-150	-14	AG	2208	3.3	.0	17.0
R. Lone Tr EBDX	150	-14	750	-14	AG	2598	3.3	.0	13.5
S. Lone Tr WBAX	750	12	150	12	AG	2343	3.3	.0	13.5
T. Lone Tr WBDX	-150	12	-750	12	AG	1855	3.3	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Aviano
RUN: 2011nP-13 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	21	-22	1.8
2. NW	-14	19	1.8
3. SW	-14	-24	1.8
4. NE	19	21	1.8
5. ES mdblk	150	-22	1.8
6. WN mdblk	-150	19	1.8
7. WS mdblk	-150	-24	1.8
8. EN mdblk	150	21	1.8
9. SE mdblk	21	-150	1.8
10. NW mdblk	-14	150	1.8
11. SW mdblk	-14	-150	1.8
12. NE mdblk	19	150	1.8
13. ES blk	600	-22	1.8
14. WN blk	-600	19	1.8
15. WS blk	-600	-24	1.8
16. EN blk	600	21	1.8
17. SE blk	21	-600	1.8
18. NW blk	-14	600	1.8
19. SW blk	-14	-600	1.8
20. NE blk	19	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Aviano
RUN: 2011PP-14 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	277.	3.3	.0	.0	.0	.0	.4	.0	2.1	.0
2. NW	98.	2.6	.0	.0	.0	.0	.0	.0	.0	.2
3. SW	73.	2.6	.0	.0	.0	.0	.6	.0	.6	.5
4. NE	99.	2.7	.0	.0	.0	.0	.0	.0	.0	.2
5. ES mdblk	277.	2.0	.0	.0	.0	.0	.0	.0	.2	.8
6. WN mdblk	100.	2.6	.0	.0	.0	.0	.1	.0	.7	.0
7. WS mdblk	82.	2.9	.0	.0	.0	.0	.0	.0	2.0	.0
8. EN mdblk	262.	3.1	.0	.0	.0	.0	.0	.0	.3	.2
9. SE mdblk	346.	1.0	.0	.0	.0	.0	.7	.0	.2	.0
10. NW mdblk	177.	.8	.0	.0	.0	.1	.2	.0	.1	.0
11. SW mdblk	9.	1.6	.0	.0	.0	.0	1.3	.0	.0	.0
12. NE mdblk	185.	.7	.0	.0	.0	.0	.2	.0	.1	.0
13. ES blk	277.	1.4	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	97.	1.8	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	83.	1.7	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	263.	1.7	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	353.	.6	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	177.	.4	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	6.	.9	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	185.	.3	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Aviano
RUN: 2011PP-14 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.3	.0	.0	.0	.0	.0	.2	.0	.0	.2
2. NW	.0	1.6	.3	.2	.0	.0	.0	.0	.0	.1	.1	.0
3. SW	.0	.7	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	.0	2.0	.0	.2	.0	.0	.0	.0	.0	.1	.1	.0
5. ES mdblk	.0	.5	.2	.1	.0	.0	.0	.0	.0	.0	.0	.1
6. WN mdblk	.0	.0	1.5	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.3	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	2.0	.1	.2	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.8	.4	.0
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.5	.0	.0	1.1
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	1.1	.0	.0	.4
17. SE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.3	1.1	.0
18. NW blk	.0	.0	.0	.0	.0	.0	.0	.3	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Aviano
RUN: 2011PP-14 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S Z0= 100. CM ALT= 91. (M)
BRG= WORST CASE VD= .0 CM/S
CLAS= 7 (G) VS= .0 CM/S
MIXH= 1000. M AMB= .0 PPM
SIGTH= 10. DEGREES TEMP= 10.0 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. SR-4 Byp NBA	0	-150	0	0	AG	0	3.3	.0	10.0
B. SR-4 Byp NBD	0	0	0	150	AG	0	3.3	.0	10.0
C. SR-4 Byp NBL	2	-150	0	0	AG	0	3.3	.0	10.0
D. SR-4 Byp SBA	-7	150	-7	0	AG	121	5.9	.0	10.0
E. SR-4 Byp SBD	-7	0	-7	-150	AG	1315	7.0	.0	10.0
F. SR-4 Byp SBL	-5	150	0	0	AG	111	6.4	.0	10.0
G. Lone Tre EBA	-150	-5	0	-5	AG	2511	6.8	.0	13.5
H. Lone Tre EBD	0	-5	150	-5	AG	1580	3.8	.0	10.0
I. Lone Tre EBL	-150	-2	0	0	AG	0	3.3	.0	10.0
J. Lone Tre WBA	150	7	0	7	AG	2433	6.8	.0	10.0
K. Lone Tre WBD	0	7	-150	7	AG	2554	4.8	.0	10.0
L. Lone Tre WBL	150	5	0	0	AG	273	6.9	.0	10.0
M. SR-4 By NBAX	0	-750	0	-150	AG	0	3.3	.0	10.0
N. SR-4 By NBDX	0	150	0	750	AG	0	3.3	.0	10.0
O. SR-4 By SBAX	-7	750	-7	150	AG	232	3.3	.0	10.0
P. SR-4 By SBDX	-7	-150	-7	-750	AG	1315	3.3	.0	10.0
Q. Lone Tr EBAX	-750	-5	-150	-5	AG	2511	3.3	.0	13.5
R. Lone Tr EBDX	150	-5	750	-5	AG	1580	3.3	.0	10.0
S. Lone Tr WBAX	750	7	150	7	AG	2706	3.3	.0	10.0
T. Lone Tr WBDX	-150	7	-750	7	AG	2554	3.3	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Aviano
RUN: 2011PP-14 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	7	-12	1.8
2. NW	-14	14	1.8
3. SW	-14	-14	1.8
4. NE	7	14	1.8
5. ES mdblk	150	-12	1.8
6. WN mdblk	-150	14	1.8
7. WS mdblk	-150	-14	1.8
8. EN mdblk	150	14	1.8
9. SE mdblk	7	-150	1.8
10. NW mdblk	-14	150	1.8
11. SW mdblk	-14	-150	1.8
12. NE mdblk	7	150	1.8
13. ES blk	600	-12	1.8
14. WN blk	-600	14	1.8
15. WS blk	-600	-14	1.8
16. EN blk	600	14	1.8
17. SE blk	7	-600	1.8
18. NW blk	-14	600	1.8
19. SW blk	-14	-600	1.8
20. NE blk	7	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Aviano
RUN: 2011nP-15 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	354.	.2	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	95.	.2	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	6.	.1	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	354.	.2	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	280.	.1	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	91.	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	88.	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	262.	.1	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	359.	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	169.	.1	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	2.	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	188.	.1	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	276.	.1	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	89.	.0	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	88.	.0	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	265.	.1	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	1.	.0	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	174.	.1	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	2.	.0	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	185.	.1	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Aviano
RUN: 2011nP-15 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Aviano
RUN: 2011nP-15 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S Z0= 100. CM ALT= 91. (M)
BRG= WORST CASE VD= .0 CM/S
CLAS= 7 (G) VS= .0 CM/S
MIXH= 1000. M AMB= .0 PPM
SIGTH= 10. DEGREES TEMP= 10.0 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. High Sch NBA	0	-150	0	0	AG	0	3.3	.0	10.0
B. High Sch NBD	0	0	0	150	AG	80	3.5	.0	10.0
C. High Sch NBL	2	-150	0	0	AG	0	3.3	.0	10.0
D. High Sch SBA	-4	150	-4	0	AG	0	3.3	.0	10.0
E. High Sch SBD	-4	0	-4	-150	AG	0	3.3	.0	10.0
F. High Sch SBL	-2	150	0	0	AG	80	6.4	.0	10.0
G. Sand Cre EBA	-150	0	0	0	AG	0	3.3	.0	10.0
H. Sand Cre EBD	0	0	150	0	AG	80	3.5	.0	10.0
I. Sand Cre EBL	-150	-2	0	0	AG	0	3.3	.0	10.0
J. Sand Cre WBA	150	4	0	4	AG	80	5.1	.0	10.0
K. Sand Cre WBD	0	4	-150	4	AG	0	3.3	.0	10.0
L. Sand Cre WBL	150	2	0	0	AG	0	3.3	.0	10.0
M. High Sc NBAX	0	-750	0	-150	AG	0	3.3	.0	10.0
N. High Sc NBDX	0	150	0	750	AG	80	3.3	.0	10.0
O. High Sc SBAX	-4	750	-4	150	AG	80	3.3	.0	10.0
P. High Sc SBDX	-4	-150	-4	-750	AG	0	3.3	.0	10.0
Q. Sand Cr EBAX	-750	0	-150	0	AG	0	3.3	.0	10.0
R. Sand Cr EBDX	150	0	750	0	AG	80	3.3	.0	10.0
S. Sand Cr WBAX	750	4	150	4	AG	80	3.3	.0	10.0
T. Sand Cr WBDX	-150	4	-750	4	AG	0	3.3	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Aviano
RUN: 2011nP-15 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	7	-7	1.8
2. NW	-10	10	1.8
3. SW	-10	-7	1.8
4. NE	7	10	1.8
5. ES mdblk	150	-7	1.8
6. WN mdblk	-150	10	1.8
7. WS mdblk	-150	-7	1.8
8. EN mdblk	150	10	1.8
9. SE mdblk	7	-150	1.8
10. NW mdblk	-10	150	1.8
11. SW mdblk	-10	-150	1.8
12. NE mdblk	7	150	1.8
13. ES blk	600	-7	1.8
14. WN blk	-600	10	1.8
15. WS blk	-600	-7	1.8
16. EN blk	600	10	1.8
17. SE blk	7	-600	1.8
18. NW blk	-10	600	1.8
19. SW blk	-10	-600	1.8
20. NE blk	7	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Aviano
RUN: 2011PP-01 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	278.	2.4	.2	.0	.0	.0	.0	.0	1.0	.5
2. NW	98.	2.1	.0	.0	.0	.1	.0	.0	.0	.3
3. SW	79.	2.4	.1	.0	.0	.0	.2	.0	.4	1.0
4. NE	257.	1.8	.0	.2	.0	.0	.0	.0	.5	.0
5. ES mdblk	279.	2.3	.0	.0	.0	.0	.0	.0	.0	1.5
6. WN mdblk	98.	1.7	.0	.0	.0	.0	.0	.0	.3	.2
7. WS mdblk	82.	2.2	.0	.0	.0	.0	.0	.0	1.4	.1
8. EN mdblk	261.	2.1	.0	.0	.0	.0	.0	.0	.2	.2
9. SE mdblk	351.	1.1	.4	.0	.1	.0	.0	.0	.0	.0
10. NW mdblk	171.	1.0	.0	.0	.0	.3	.0	.2	.0	.0
11. SW mdblk	8.	1.1	.0	.0	.0	.0	.5	.0	.0	.0
12. NE mdblk	187.	1.1	.0	.4	.0	.0	.0	.0	.0	.0
13. ES blk	277.	1.4	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	97.	1.2	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	84.	1.3	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	263.	1.3	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	354.	.8	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	174.	.7	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	7.	.9	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	186.	.8	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Aviano
RUN: 2011PP-01 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.1
2. NW	.0	.9	.2	.1	.0	.0	.0	.0	.0	.2	.0	.0
3. SW	.0	.3	.0	.1	.0	.0	.0	.0	.0	.0	.1	.0
4. NE	.0	.4	.5	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	.0	.3	.1	.1	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.1	.8	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.2	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	1.1	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.9	.3	.0
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.3	.0	.0
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.8	.0	.0
17. SE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.3	.0	.0
18. NW blk	.0	.0	.0	.0	.4	.0	.0	.1	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.0	.1	.3	.0	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.0	.4	.1	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Aviano
RUN: 2011PP-01 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S Z0= 100. CM ALT= 91. (M)
BRG= WORST CASE VD= .0 CM/S
CLAS= 7 (G) VS= .0 CM/S
MIXH= 1000. M AMB= .0 PPM
SIGTH= 10. DEGREES TEMP= 10.0 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Deer Val NBA	12	-150	12	0	AG	607	5.4	.0	13.5
B. Deer Val NBD	12	0	12	150	AG	781	3.6	.0	10.0
C. Deer Val NBL	9	-150	0	0	AG	295	6.4	.0	10.0
D. Deer Val SBA	-9	150	-9	0	AG	368	5.1	.0	13.5
E. Deer Val SBD	-9	0	-9	-150	AG	866	3.7	.0	10.0
F. Deer Val SBL	-5	150	0	0	AG	323	7.0	.0	10.0
G. Lone Tre EBA	-150	-9	0	-9	AG	1625	6.9	.0	13.5
H. Lone Tre EBD	0	-9	150	-9	AG	1943	6.1	.0	10.0
I. Lone Tre EBL	-150	-5	0	0	AG	122	6.4	.0	10.0
J. Lone Tre WBA	150	9	0	9	AG	1375	6.4	.0	13.5
K. Lone Tre WBD	0	9	-150	9	AG	1389	4.1	.0	10.0
L. Lone Tre WBL	150	5	0	0	AG	264	6.9	.0	10.0
M. Deer Va NBAX	12	-750	12	-150	AG	902	3.3	.0	13.5
N. Deer Va NBDX	12	150	12	750	AG	781	3.3	.0	10.0
O. Deer Va SBAX	-9	750	-9	150	AG	691	3.3	.0	13.5
P. Deer Va SBDX	-9	-150	-9	-750	AG	866	3.3	.0	10.0
Q. Lone Tr EBAX	-750	-9	-150	-9	AG	1747	3.3	.0	13.5
R. Lone Tr EBDX	150	-9	750	-9	AG	1943	3.3	.0	10.0
S. Lone Tr WBAX	750	9	150	9	AG	1639	3.3	.0	13.5
T. Lone Tr WBDX	-150	9	-750	9	AG	1389	3.3	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Aviano
RUN: 2011PP-01 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	21	-15	1.8
2. NW	-17	15	1.8
3. SW	-15	-17	1.8
4. NE	19	17	1.8
5. ES mdblk	150	-15	1.8
6. WN mdblk	-150	15	1.8
7. WS mdblk	-150	-17	1.8
8. EN mdblk	150	17	1.8
9. SE mdblk	21	-150	1.8
10. NW mdblk	-17	150	1.8
11. SW mdblk	-15	-150	1.8
12. NE mdblk	19	150	1.8
13. ES blk	600	-15	1.8
14. WN blk	-600	15	1.8
15. WS blk	-600	-17	1.8
16. EN blk	600	17	1.8
17. SE blk	21	-600	1.8
18. NW blk	-17	600	1.8
19. SW blk	-15	-600	1.8
20. NE blk	19	600	1.8

JOB: Aviano
RUN: 2011PP-02 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	350.	.8	.1	.4	.0	.1	.0	.0	.0	.0
2. NW	8.	.8	.0	.0	.0	.5	.0	.0	.0	.0
3. SW	7.	.9	.0	.0	.0	.5	.0	.0	.0	.0
4. NE	187.	.9	.5	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	282.	.2	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	93.	.2	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	84.	.2	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	262.	.3	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	352.	.9	.5	.0	.0	.1	.0	.0	.0	.0
10. NW mdblk	172.	.9	.1	.0	.0	.5	.0	.0	.0	.0
11. SW mdblk	7.	.8	.0	.0	.0	.0	.4	.0	.0	.0
12. NE mdblk	187.	.8	.0	.5	.0	.0	.0	.0	.0	.0
13. ES blk	276.	.2	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	93.	.1	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	86.	.1	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	265.	.2	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	354.	.7	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	173.	.7	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	7.	.7	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	187.	.8	.0	.0	.0	.0	.0	.0	.0	.0

JOB: Aviano
RUN: 2011PP-02 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0
3. SW	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0
4. NE	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0
5. ES mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0
18. NW blk	.0	.0	.0	.0	.4	.0	.0	.1	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.0	.2	.4	.0	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.5	.2	.0	.0	.0	.0	.0

JOB: Aviano
RUN: 2011PP-02 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S Z0= 100. CM ALT= 91. (M)
BRG= WORST CASE VD= .0 CM/S
CLAS= 7 (G) VS= .0 CM/S
MIXH= 1000. M AMB= .0 PPM
SIGTH= 10. DEGREES TEMP= 10.0 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Deer Val NBA	9	-150	9	0	AG	841	5.0	.0	13.5
B. Deer Val NBD	9	0	9	150	AG	973	3.5	.0	10.0
C. Deer Val NBL	5	-150	0	0	AG	14	6.4	.0	10.0
D. Deer Val SBA	-9	150	-9	0	AG	829	5.0	.0	13.5
E. Deer Val SBD	-9	0	-9	-150	AG	849	3.5	.0	10.0
F. Deer Val SBL	-5	150	0	0	AG	32	6.4	.0	10.0
G. Marita D EBA	-150	-7	0	-7	AG	5	5.9	.0	10.0
H. Marita D EBD	0	-7	150	-7	AG	37	3.8	.0	10.0
I. Marita D EBL	-150	-5	0	0	AG	11	6.4	.0	10.0
J. Marita D WBA	150	7	0	7	AG	130	5.9	.0	10.0
K. Marita D WBD	0	7	-150	7	AG	39	3.8	.0	10.0
L. Marita D WBL	150	5	0	0	AG	36	6.4	.0	10.0
M. Deer Va NBAX	9	-750	9	-150	AG	855	3.3	.0	13.5
N. Deer Va NBDX	9	150	9	750	AG	973	3.3	.0	10.0
O. Deer Va SBAX	-9	750	-9	150	AG	861	3.3	.0	13.5
P. Deer Va SBDX	-9	-150	-9	-750	AG	849	3.3	.0	10.0
Q. Marita EBAX	-750	-7	-150	-7	AG	16	3.3	.0	10.0
R. Marita EBDX	150	-7	750	-7	AG	37	3.3	.0	10.0
S. Marita WBAX	750	7	150	7	AG	166	3.3	.0	10.0
T. Marita WBDX	-150	7	-750	7	AG	39	3.3	.0	10.0

JOB: Aviano
RUN: 2011PP-02 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	17	-14	1.8
2. NW	-17	14	1.8
3. SW	-15	-14	1.8
4. NE	15	14	1.8
5. ES mdblk	150	-14	1.8
6. WN mdblk	-150	14	1.8
7. WS mdblk	-150	-14	1.8
8. EN mdblk	150	14	1.8
9. SE mdblk	17	-150	1.8
10. NW mdblk	-17	150	1.8
11. SW mdblk	-15	-150	1.8
12. NE mdblk	15	150	1.8
13. ES blk	600	-14	1.8
14. WN blk	-600	14	1.8
15. WS blk	-600	-14	1.8
16. EN blk	600	14	1.8
17. SE blk	17	-600	1.8
18. NW blk	-17	600	1.8
19. SW blk	-15	-600	1.8
20. NE blk	15	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Aviano
RUN: 2011PP-03 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	350.	.9	.0	.3	.0	.1	.0	.0	.0	.0
2. NW	170.	.8	.1	.0	.0	.0	.3	.0	.0	.0
3. SW	7.	1.0	.0	.0	.0	.5	.0	.0	.0	.0
4. NE	187.	.9	.5	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	277.	.4	.0	.0	.0	.0	.0	.0	.0	.2
6. WN mdblk	97.	.4	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	82.	.4	.0	.0	.0	.0	.0	.0	.1	.0
8. EN mdblk	264.	.4	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	352.	.9	.5	.0	.0	.1	.0	.0	.0	.0
10. NW mdblk	172.	.9	.1	.0	.0	.5	.0	.0	.0	.0
11. SW mdblk	7.	.8	.0	.0	.0	.0	.3	.0	.0	.0
12. NE mdblk	188.	.8	.0	.4	.0	.1	.0	.0	.0	.0
13. ES blk	276.	.4	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	96.	.3	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	84.	.3	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	264.	.3	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	354.	.6	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	173.	.7	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	6.	.6	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	187.	.7	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Aviano
RUN: 2011PP-03 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.2
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	.0	.0	.0	.0	.4	.0	.0	.1	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.1	.0	.0	.4	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.4	.2	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Aviano
RUN: 2011PP-03 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S Z0= 100. CM ALT= 91. (M)
BRG= WORST CASE VD= .0 CM/S
CLAS= 7 (G) VS= .0 CM/S
MIXH= 1000. M AMB= .0 PPM
SIGTH= 10. DEGREES TEMP= 10.0 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Deer Val NBA	9	-150	9	0	AG	717	5.4	.0	13.5
B. Deer Val NBD	9	0	9	150	AG	834	3.7	.0	10.0
C. Deer Val NBL	5	-150	0	0	AG	89	6.4	.0	10.0
D. Deer Val SBA	-9	150	-9	0	AG	693	5.4	.0	13.5
E. Deer Val SBD	-9	0	-9	-150	AG	652	3.6	.0	10.0
F. Deer Val SBL	-5	150	0	0	AG	147	6.4	.0	10.0
G. Crocker EBA	-150	-7	0	-7	AG	139	5.1	.0	10.0
H. Crocker EBD	0	-7	150	-7	AG	301	3.5	.0	10.0
I. Crocker EBL	-150	-5	0	0	AG	84	6.4	.0	10.0
J. Crocker WBA	150	7	0	7	AG	189	5.1	.0	10.0
K. Crocker WBD	0	7	-150	7	AG	289	3.5	.0	10.0
L. Crocker WBL	150	5	0	0	AG	18	6.4	.0	10.0
M. Deer Va NBAX	9	-750	9	-150	AG	806	3.3	.0	13.5
N. Deer Va NBDX	9	150	9	750	AG	834	3.3	.0	10.0
O. Deer Va SBAX	-9	750	-9	150	AG	840	3.3	.0	13.5
P. Deer Va SBDX	-9	-150	-9	-750	AG	652	3.3	.0	10.0
Q. Crocker EBAX	-750	-7	-150	-7	AG	223	3.3	.0	10.0
R. Crocker EBDX	150	-7	750	-7	AG	301	3.3	.0	10.0
S. Crocker WBAX	750	7	150	7	AG	207	3.3	.0	10.0
T. Crocker WBDX	-150	7	-750	7	AG	289	3.3	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Aviano
RUN: 2011PP-03 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	17	-14	1.8
2. NW	-17	14	1.8
3. SW	-15	-14	1.8
4. NE	15	14	1.8
5. ES mdblk	150	-14	1.8
6. WN mdblk	-150	14	1.8
7. WS mdblk	-150	-14	1.8
8. EN mdblk	150	14	1.8
9. SE mdblk	17	-150	1.8
10. NW mdblk	-17	150	1.8
11. SW mdblk	-15	-150	1.8
12. NE mdblk	15	150	1.8
13. ES blk	600	-14	1.8
14. WN blk	-600	14	1.8
15. WS blk	-600	-14	1.8
16. EN blk	600	14	1.8
17. SE blk	17	-600	1.8
18. NW blk	-17	600	1.8
19. SW blk	-15	-600	1.8
20. NE blk	15	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Aviano
RUN: 2011PP-04 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	188.	.7	.5	.0	.0	.0	.0	.0	.0	.0
2. NW	8.	.7	.0	.0	.0	.4	.0	.0	.0	.0
3. SW	8.	.7	.0	.0	.0	.4	.0	.0	.0	.0
4. NE	187.	.8	.5	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	280.	.2	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	92.	.1	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	88.	.1	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	260.	.2	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	352.	.8	.5	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	172.	.8	.1	.0	.0	.4	.0	.0	.0	.0
11. SW mdblk	7.	.6	.0	.0	.0	.0	.3	.0	.0	.0
12. NE mdblk	187.	.7	.0	.4	.0	.0	.0	.0	.0	.0
13. ES blk	275.	.1	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	90.	.0	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	89.	.0	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	265.	.1	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	354.	.6	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	173.	.6	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	7.	.6	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	186.	.6	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Aviano
RUN: 2011PP-04 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0
3. SW	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0
4. NE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	.0	.0	.0	.0	.4	.0	.0	.0	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.2	.3	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.2	.0	.0	.3	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.4	.1	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Aviano
RUN: 2011PP-04 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S Z0= 100. CM ALT= 91. (M)
BRG= WORST CASE VD= .0 CM/S
CLAS= 7 (G) VS= .0 CM/S
MIXH= 1000. M AMB= .0 PPM
SIGTH= 10. DEGREES TEMP= 10.0 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Deer Val NBA	9	-150	9	0	AG	816	5.0	.0	13.5
B. Deer Val NBD	9	0	9	150	AG	852	3.5	.0	10.0
C. Deer Val NBL	5	-150	0	0	AG	0	3.3	.0	10.0
D. Deer Val SBA	-9	150	-9	0	AG	558	5.2	.0	10.0
E. Deer Val SBD	-9	0	-9	-150	AG	561	3.6	.0	10.0
F. Deer Val SBL	-9	150	0	0	AG	69	6.4	.0	10.0
G. Mammoth EBA	-150	0	0	0	AG	0	3.3	.0	10.0
H. Mammoth EBD	0	0	150	0	AG	74	3.8	.0	10.0
I. Mammoth EBL	-150	-2	0	0	AG	0	3.3	.0	10.0
J. Mammoth WBA	150	5	0	5	AG	41	5.9	.0	10.0
K. Mammoth WBD	0	5	-150	5	AG	0	3.3	.0	10.0
L. Mammoth WBL	150	5	0	0	AG	3	6.4	.0	10.0
M. Deer Va NBAX	9	-750	9	-150	AG	816	3.3	.0	13.5
N. Deer Va NBDX	9	150	9	750	AG	852	3.3	.0	10.0
O. Deer Va SBAX	-9	750	-9	150	AG	627	3.3	.0	10.0
P. Deer Va SBDX	-9	-150	-9	-750	AG	561	3.3	.0	10.0
Q. Mammoth EBAX	-750	0	-150	0	AG	0	3.3	.0	10.0
R. Mammoth EBDX	150	0	750	0	AG	74	3.3	.0	10.0
S. Mammoth WBAX	750	5	150	5	AG	44	3.3	.0	10.0
T. Mammoth WBDX	-150	5	-750	5	AG	0	3.3	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Aviano
RUN: 2011PP-04 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	17	-7	1.8
2. NW	-15	12	1.8
3. SW	-15	-7	1.8
4. NE	15	12	1.8
5. ES mdblk	150	-7	1.8
6. WN mdblk	-150	12	1.8
7. WS mdblk	-150	-7	1.8
8. EN mdblk	150	12	1.8
9. SE mdblk	17	-150	1.8
10. NW mdblk	-15	150	1.8
11. SW mdblk	-15	-150	1.8
12. NE mdblk	15	150	1.8
13. ES blk	600	-7	1.8
14. WN blk	-600	12	1.8
15. WS blk	-600	-7	1.8
16. EN blk	600	12	1.8
17. SE blk	17	-600	1.8
18. NW blk	-15	600	1.8
19. SW blk	-15	-600	1.8
20. NE blk	15	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Aviano
RUN: 2011PP-05 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	84.	.1	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	96.	.1	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	84.	.1	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	96.	.1	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	276.	.1	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	95.	.1	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	84.	.1	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	264.	.1	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	358.	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	170.	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	2.	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	188.	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	275.	.1	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	95.	.1	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	85.	.1	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	265.	.1	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	360.	.0	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	176.	.0	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	1.	.0	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	184.	.0	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Aviano
RUN: 2011PP-05 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Aviano
RUN: 2011PP-05 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S Z0= 100. CM ALT= 91. (M)
BRG= WORST CASE VD= .0 CM/S
CLAS= 7 (G) VS= .0 CM/S
MIXH= 1000. M AMB= .0 PPM
SIGTH= 10. DEGREES TEMP= 10.0 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Project NBA	0	-150	0	0	AG	0	3.3	.0	10.0
B. Project NBD	0	0	0	150	AG	12	3.8	.0	10.0
C. Project NBL	2	-150	0	0	AG	0	3.3	.0	10.0
D. Project SBA	-5	150	-5	0	AG	0	3.3	.0	10.0
E. Project SBD	-5	0	-5	-150	AG	0	3.3	.0	10.0
F. Project SBL	-5	150	0	0	AG	13	6.4	.0	10.0
G. Sand Cre EBA	-150	-5	0	-5	AG	80	4.7	.0	10.0
H. Sand Cre EBD	0	-5	150	-5	AG	93	3.4	.0	10.0
I. Sand Cre EBL	-150	-5	0	0	AG	0	3.3	.0	10.0
J. Sand Cre WBA	150	4	0	4	AG	92	4.7	.0	10.0
K. Sand Cre WBD	0	4	-150	4	AG	80	3.4	.0	10.0
L. Sand Cre WBL	150	2	0	0	AG	0	3.3	.0	10.0
M. Project NBAX	0	-750	0	-150	AG	0	3.3	.0	10.0
N. Project NBDX	0	150	0	750	AG	12	3.3	.0	10.0
O. Project SBAX	-5	750	-5	150	AG	13	3.3	.0	10.0
P. Project SBDX	-5	-150	-5	-750	AG	0	3.3	.0	10.0
Q. Sand Cr EBAX	-750	-5	-150	-5	AG	80	3.3	.0	10.0
R. Sand Cr EBDX	150	-5	750	-5	AG	93	3.3	.0	10.0
S. Sand Cr WBAX	750	4	150	4	AG	92	3.3	.0	10.0
T. Sand Cr WBDX	-150	4	-750	4	AG	80	3.3	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Aviano
RUN: 2011PP-05 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	7	-12	1.8
2. NW	-12	10	1.8
3. SW	-12	-12	1.8
4. NE	7	10	1.8
5. ES mdblk	150	-12	1.8
6. WN mdblk	-150	10	1.8
7. WS mdblk	-150	-12	1.8
8. EN mdblk	150	10	1.8
9. SE mdblk	7	-150	1.8
10. NW mdblk	-12	150	1.8
11. SW mdblk	-12	-150	1.8
12. NE mdblk	7	150	1.8
13. ES blk	600	-12	1.8
14. WN blk	-600	10	1.8
15. WS blk	-600	-12	1.8
16. EN blk	600	10	1.8
17. SE blk	7	-600	1.8
18. NW blk	-12	600	1.8
19. SW blk	-12	-600	1.8
20. NE blk	7	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Aviano
RUN: 2011PP-06 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	354.	.1	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	6.	.2	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	6.	.2	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	263.	.2	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	273.	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	99.	.1	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	79.	.2	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	268.	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	357.	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	171.	.1	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	1.	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	191.	.1	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	273.	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	95.	.1	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	84.	.1	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	271.	.0	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	358.	.0	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	175.	.1	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	359.	.0	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	186.	.1	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Aviano
RUN: 2011PP-06 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Aviano
RUN: 2011PP-06 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S Z0= 100. CM ALT= 91. (M)
BRG= WORST CASE VD= .0 CM/S
CLAS= 7 (G) VS= .0 CM/S
MIXH= 1000. M AMB= .0 PPM
SIGTH= 10. DEGREES TEMP= 10.0 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Hillcres NBA	0	-150	0	0	AG	0	3.3	.0	10.0
B. Hillcres NBD	0	0	0	150	AG	93	3.8	.0	10.0
C. Hillcres NBL	2	-150	0	0	AG	0	3.3	.0	10.0
D. Hillcres SBA	-5	150	-5	0	AG	92	5.9	.0	10.0
E. Hillcres SBD	-5	0	-5	-150	AG	0	3.3	.0	10.0
F. Hillcres SBL	-5	150	0	0	AG	1	6.4	.0	10.0
G. Sand Cre EBA	-150	-5	0	-5	AG	0	3.3	.0	10.0
H. Sand Cre EBD	0	-5	150	-5	AG	1	3.4	.0	10.0
I. Sand Cre EBL	-150	-5	0	0	AG	93	6.4	.0	10.0
J. Sand Cre WBA	150	4	0	4	AG	0	3.3	.0	10.0
K. Sand Cre WBD	0	4	-150	4	AG	92	3.4	.0	10.0
L. Sand Cre WBL	150	2	0	0	AG	0	3.3	.0	10.0
M. Hillcre NBAX	0	-750	0	-150	AG	0	3.3	.0	10.0
N. Hillcre NBDX	0	150	0	750	AG	93	3.3	.0	10.0
O. Hillcre SBAX	-5	750	-5	150	AG	93	3.3	.0	10.0
P. Hillcre SBDX	-5	-150	-5	-750	AG	0	3.3	.0	10.0
Q. Sand Cr EBAX	-750	-5	-150	-5	AG	93	3.3	.0	10.0
R. Sand Cr EBDX	150	-5	750	-5	AG	1	3.3	.0	10.0
S. Sand Cr WBAX	750	4	150	4	AG	0	3.3	.0	10.0
T. Sand Cr WBDX	-150	4	-750	4	AG	92	3.3	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Aviano
RUN: 2011PP-06 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	7	-12	1.8
2. NW	-12	10	1.8
3. SW	-12	-12	1.8
4. NE	7	10	1.8
5. ES mdblk	150	-12	1.8
6. WN mdblk	-150	10	1.8
7. WS mdblk	-150	-12	1.8
8. EN mdblk	150	10	1.8
9. SE mdblk	7	-150	1.8
10. NW mdblk	-12	150	1.8
11. SW mdblk	-12	-150	1.8
12. NE mdblk	7	150	1.8
13. ES blk	600	-12	1.8
14. WN blk	-600	10	1.8
15. WS blk	-600	-12	1.8
16. EN blk	600	10	1.8
17. SE blk	7	-600	1.8
18. NW blk	-12	600	1.8
19. SW blk	-12	-600	1.8
20. NE blk	7	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Aviano
RUN: 2011PP-07 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	353.	.2	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	7.	.2	.0	.0	.0	.1	.0	.0	.0	.0
3. SW	6.	.3	.0	.0	.0	.1	.0	.0	.0	.0
4. NE	265.	.2	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	273.	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	98.	.1	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	79.	.1	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	269.	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	354.	.2	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	173.	.2	.0	.0	.0	.1	.0	.0	.0	.0
11. SW mdblk	5.	.2	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	188.	.2	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	272.	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	95.	.1	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	84.	.1	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	271.	.0	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	355.	.1	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	174.	.2	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	5.	.1	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	186.	.2	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Aviano
RUN: 2011PP-07 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Aviano
RUN: 2011PP-07 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S Z0= 100. CM ALT= 91. (M)
BRG= WORST CASE VD= .0 CM/S
CLAS= 7 (G) VS= .0 CM/S
MIXH= 1000. M AMB= .0 PPM
SIGTH= 10. DEGREES TEMP= 10.0 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Hillcres NBA	7	-150	7	0	AG	93	4.7	.0	10.0
B. Hillcres NBD	7	0	7	150	AG	149	3.4	.0	10.0
C. Hillcres NBL	5	-150	0	0	AG	0	3.3	.0	10.0
D. Hillcres SBA	-5	150	-5	0	AG	194	4.7	.0	13.5
E. Hillcres SBD	-5	0	-5	-150	AG	93	3.4	.0	10.0
F. Hillcres SBL	-2	150	0	0	AG	0	3.3	.0	10.0
G. Project EBA	-150	-5	0	-5	AG	0	3.3	.0	10.0
H. Project EBD	0	-5	150	-5	AG	0	3.3	.0	10.0
I. Project EBL	-150	-5	0	0	AG	56	6.4	.0	10.0
J. Project WBA	150	0	0	0	AG	0	3.3	.0	10.0
K. Project WBD	0	0	-150	0	AG	101	3.8	.0	10.0
L. Project WBL	150	2	0	0	AG	0	3.3	.0	10.0
M. Hillcre NBAX	7	-750	7	-150	AG	93	3.3	.0	10.0
N. Hillcre NBDX	7	150	7	750	AG	149	3.3	.0	10.0
O. Hillcre SBAX	-5	750	-5	150	AG	194	3.3	.0	13.5
P. Hillcre SBDX	-5	-150	-5	-750	AG	93	3.3	.0	10.0
Q. Project EBAX	-750	-5	-150	-5	AG	56	3.3	.0	10.0
R. Project EBDX	150	-5	750	-5	AG	0	3.3	.0	10.0
S. Project WBAX	750	0	150	0	AG	0	3.3	.0	10.0
T. Project WBDX	-150	0	-750	0	AG	101	3.3	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Aviano
RUN: 2011PP-07 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	14	-12	1.8
2. NW	-14	7	1.8
3. SW	-12	-12	1.8
4. NE	14	7	1.8
5. ES mdblk	150	-12	1.8
6. WN mdblk	-150	7	1.8
7. WS mdblk	-150	-12	1.8
8. EN mdblk	150	7	1.8
9. SE mdblk	14	-150	1.8
10. NW mdblk	-14	150	1.8
11. SW mdblk	-12	-150	1.8
12. NE mdblk	14	150	1.8
13. ES blk	600	-12	1.8
14. WN blk	-600	7	1.8
15. WS blk	-600	-12	1.8
16. EN blk	600	7	1.8
17. SE blk	14	-600	1.8
18. NW blk	-14	600	1.8
19. SW blk	-12	-600	1.8
20. NE blk	14	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Aviano
RUN: 2011PP-08 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	352.	.3	.0	.1	.0	.0	.0	.0	.0	.0
2. NW	8.	.4	.0	.0	.0	.2	.0	.0	.0	.0
3. SW	6.	.5	.0	.0	.0	.2	.0	.0	.0	.0
4. NE	262.	.3	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	275.	.2	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	98.	.2	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	79.	.2	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	267.	.2	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	353.	.3	.1	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	172.	.4	.0	.0	.0	.2	.0	.0	.0	.0
11. SW mdblk	5.	.3	.0	.0	.0	.0	.1	.0	.0	.0
12. NE mdblk	189.	.3	.0	.2	.0	.0	.0	.0	.0	.0
13. ES blk	275.	.1	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	96.	.2	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	84.	.2	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	267.	.0	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	354.	.2	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	174.	.3	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	5.	.2	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	187.	.3	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Aviano
RUN: 2011PP-08 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Aviano
RUN: 2011PP-08 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S Z0= 100. CM ALT= 91. (M)
BRG= WORST CASE VD= .0 CM/S
CLAS= 7 (G) VS= .0 CM/S
MIXH= 1000. M AMB= .0 PPM
SIGTH= 10. DEGREES TEMP= 10.0 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Hillcres NBA	9	-150	9	0	AG	171	4.7	.0	13.5
B. Hillcres NBD	9	0	9	150	AG	308	3.4	.0	10.0
C. Hillcres NBL	5	-150	0	0	AG	2	6.4	.0	10.0
D. Hillcres SBA	-9	150	-9	0	AG	377	4.7	.0	13.5
E. Hillcres SBD	-9	0	-9	-150	AG	240	3.4	.0	10.0
F. Hillcres SBL	-5	150	0	0	AG	22	6.4	.0	10.0
G. Prewett EBA	-150	-7	0	-7	AG	26	5.9	.0	10.0
H. Prewett EBD	0	-7	150	-7	AG	46	3.8	.0	10.0
I. Prewett EBL	-150	-5	0	0	AG	126	6.4	.0	10.0
J. Prewett WBA	150	7	0	7	AG	22	5.9	.0	10.0
K. Prewett WBD	0	7	-150	7	AG	152	3.8	.0	10.0
L. Prewett WBL	150	5	0	0	AG	0	3.3	.0	10.0
M. Hillcre NBAX	9	-750	9	-150	AG	173	3.3	.0	13.5
N. Hillcre NBDX	9	150	9	750	AG	308	3.3	.0	10.0
O. Hillcre SBAX	-9	750	-9	150	AG	399	3.3	.0	13.5
P. Hillcre SBDX	-9	-150	-9	-750	AG	240	3.3	.0	10.0
Q. Prewett EBAX	-750	-7	-150	-7	AG	152	3.3	.0	10.0
R. Prewett EBDX	150	-7	750	-7	AG	46	3.3	.0	10.0
S. Prewett WBAX	750	7	150	7	AG	22	3.3	.0	10.0
T. Prewett WBDX	-150	7	-750	7	AG	152	3.3	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Aviano
RUN: 2011PP-08 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	17	-14	1.8
2. NW	-17	14	1.8
3. SW	-15	-14	1.8
4. NE	15	14	1.8
5. ES mdblk	150	-14	1.8
6. WN mdblk	-150	14	1.8
7. WS mdblk	-150	-14	1.8
8. EN mdblk	150	14	1.8
9. SE mdblk	17	-150	1.8
10. NW mdblk	-17	150	1.8
11. SW mdblk	-15	-150	1.8
12. NE mdblk	15	150	1.8
13. ES blk	600	-14	1.8
14. WN blk	-600	14	1.8
15. WS blk	-600	-14	1.8
16. EN blk	600	14	1.8
17. SE blk	17	-600	1.8
18. NW blk	-17	600	1.8
19. SW blk	-15	-600	1.8
20. NE blk	15	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Aviano
RUN: 2011PP-09 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	352.	.4	.0	.1	.0	.0	.0	.0	.0	.0
2. NW	7.	.4	.0	.0	.0	.2	.0	.0	.0	.0
3. SW	7.	.4	.0	.0	.0	.2	.0	.0	.0	.0
4. NE	186.	.4	.2	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	279.	.2	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	92.	.1	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	88.	.1	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	260.	.2	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	353.	.4	.2	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	173.	.5	.0	.0	.0	.2	.0	.0	.0	.0
11. SW mdblk	7.	.4	.0	.0	.0	.0	.2	.0	.0	.0
12. NE mdblk	187.	.4	.0	.1	.0	.0	.0	.0	.0	.0
13. ES blk	276.	.2	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	90.	.0	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	89.	.0	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	264.	.2	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	354.	.3	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	174.	.4	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	6.	.4	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	186.	.3	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Aviano
RUN: 2011PP-09 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.2	.1	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Aviano
RUN: 2011PP-09 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S Z0= 100. CM ALT= 91. (M)
BRG= WORST CASE VD= .0 CM/S
CLAS= 7 (G) VS= .0 CM/S
MIXH= 1000. M AMB= .0 PPM
SIGTH= 10. DEGREES TEMP= 10.0 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Hillcres NBA	5	-150	5	0	AG	315	4.7	.0	13.5
B. Hillcres NBD	5	0	5	150	AG	282	3.4	.0	10.0
C. Hillcres NBL	2	-150	0	0	AG	0	3.3	.0	10.0
D. Hillcres SBA	-7	150	-7	0	AG	342	4.7	.0	10.0
E. Hillcres SBD	-7	0	-7	-150	AG	394	3.4	.0	10.0
F. Hillcres SBL	-5	150	0	0	AG	64	6.4	.0	10.0
G. Vista Gr EBA	-150	0	0	0	AG	0	3.3	.0	10.0
H. Vista Gr EBD	0	0	150	0	AG	127	3.8	.0	10.0
I. Vista Gr EBL	-150	-2	0	0	AG	0	3.3	.0	10.0
J. Vista Gr WBA	150	5	0	5	AG	30	5.9	.0	10.0
K. Vista Gr WBD	0	5	-150	5	AG	0	3.3	.0	10.0
L. Vista Gr WBL	150	5	0	0	AG	52	6.4	.0	10.0
M. Hillcre NBAX	5	-750	5	-150	AG	315	3.3	.0	13.5
N. Hillcre NBDX	5	150	5	750	AG	282	3.3	.0	10.0
O. Hillcre SBAX	-7	750	-7	150	AG	406	3.3	.0	10.0
P. Hillcre SBDX	-7	-150	-7	-750	AG	394	3.3	.0	10.0
Q. Vista G EBAX	-750	0	-150	0	AG	0	3.3	.0	10.0
R. Vista G EBDX	150	0	750	0	AG	127	3.3	.0	10.0
S. Vista G WBAX	750	5	150	5	AG	82	3.3	.0	10.0
T. Vista G WBDX	-150	5	-750	5	AG	0	3.3	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Aviano
RUN: 2011PP-09 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	14	-7	1.8
2. NW	-14	12	1.8
3. SW	-14	-7	1.8
4. NE	12	12	1.8
5. ES mdblk	150	-7	1.8
6. WN mdblk	-150	12	1.8
7. WS mdblk	-150	-7	1.8
8. EN mdblk	150	12	1.8
9. SE mdblk	14	-150	1.8
10. NW mdblk	-14	150	1.8
11. SW mdblk	-14	-150	1.8
12. NE mdblk	12	150	1.8
13. ES blk	600	-7	1.8
14. WN blk	-600	12	1.8
15. WS blk	-600	-7	1.8
16. EN blk	600	12	1.8
17. SE blk	14	-600	1.8
18. NW blk	-14	600	1.8
19. SW blk	-14	-600	1.8
20. NE blk	12	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Aviano
RUN: 2011PP-10 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	78.	2.4	.0	.0	.0	.0	.0	.0	.0	1.8
2. NW	98.	2.7	.0	.1	.0	.0	.0	.2	.0	.3
3. SW	79.	2.4	.0	.0	.0	.0	.0	.0	.3	1.2
4. NE	257.	2.3	.0	.3	.0	.0	.0	.2	.4	.0
5. ES mdblk	280.	2.7	.0	.0	.0	.0	.0	.0	.0	1.8
6. WN mdblk	98.	1.9	.0	.0	.0	.0	.0	.0	.3	.3
7. WS mdblk	82.	2.3	.0	.0	.0	.0	.0	.0	1.3	.1
8. EN mdblk	261.	2.5	.0	.0	.0	.0	.0	.0	.2	.3
9. SE mdblk	355.	.9	.1	.0	.0	.0	.0	.1	.0	.1
10. NW mdblk	166.	1.2	.0	.2	.0	.2	.0	.5	.0	.1
11. SW mdblk	6.	1.0	.0	.0	.0	.0	.2	.1	.0	.0
12. NE mdblk	190.	1.3	.0	.5	.0	.0	.0	.3	.1	.0
13. ES blk	277.	1.6	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	97.	1.3	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	83.	1.4	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	263.	1.4	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	355.	.5	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	173.	1.0	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	6.	.6	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	187.	1.0	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Aviano
RUN: 2011PP-10 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.4	.0	.0	.0	.0	.0	.0	.0	.2	.0	
2. NW	.0	1.3	.2	.0	.0	.0	.0	.0	.2	.1	.0	
3. SW	.0	.4	.0	.0	.0	.0	.0	.0	.0	.1	.0	
4. NE	.1	.5	.6	.0	.0	.0	.0	.0	.0	.0	.0	
5. ES mdblk	.0	.4	.1	.0	.0	.0	.0	.0	.0	.0	.0	
6. WN mdblk	.1	.1	.9	.0	.0	.0	.0	.0	.0	.0	.0	
7. WS mdblk	.2	.3	.1	.0	.0	.0	.0	.0	.0	.0	.0	
8. EN mdblk	.0	1.6	.0	.0	.0	.0	.0	.0	.0	.0	.0	
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	
10. NW mdblk	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.3	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.3	.0	.0	.7
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.8	.0	.0	.2
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.3	.9	.0
17. SE blk	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.2	.5	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.5	.2	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Aviano
RUN: 2011PP-10 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S Z0= 100. CM ALT= 91. (M)
BRG= WORST CASE VD= .0 CM/S
CLAS= 7 (G) VS= .0 CM/S
MIXH= 1000. M AMB= .0 PPM
SIGTH= 10. DEGREES TEMP= 10.0 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Hillcres NBA	9	-150	9	0	AG	140	5.1	.0	13.5
B. Hillcres NBD	9	0	9	150	AG	1022	3.8	.0	10.0
C. Hillcres NBL	5	-150	0	0	AG	146	6.4	.0	10.0
D. Hillcres SBA	-9	150	-9	0	AG	258	5.1	.0	13.5
E. Hillcres SBD	-9	0	-9	-150	AG	409	3.6	.0	10.0
F. Hillcres SBL	-5	150	0	0	AG	849	7.0	.0	10.0
G. Lone Tre EBA	-150	-9	0	-9	AG	1592	6.7	.0	13.5
H. Lone Tre EBD	0	-9	150	-9	AG	2337	6.1	.0	10.0
I. Lone Tre EBL	-150	-5	0	0	AG	282	6.9	.0	10.0
J. Lone Tre WBA	150	9	0	9	AG	1883	7.0	.0	13.5
K. Lone Tre WBD	0	9	-150	9	AG	1491	4.7	.0	10.0
L. Lone Tre WBL	150	5	0	0	AG	110	6.4	.0	10.0
M. Hillcre NBAX	9	-750	9	-150	AG	286	3.3	.0	13.5
N. Hillcre NBDX	9	150	9	750	AG	1022	3.3	.0	10.0
O. Hillcre SBAX	-9	750	-9	150	AG	1106	3.3	.0	13.5
P. Hillcre SBDX	-9	-150	-9	-750	AG	409	3.3	.0	10.0
Q. Lone Tr EBAX	-750	-9	-150	-9	AG	1874	3.3	.0	13.5
R. Lone Tr EBDX	150	-9	750	-9	AG	2337	3.3	.0	10.0
S. Lone Tr WBAX	750	9	150	9	AG	1993	3.3	.0	13.5
T. Lone Tr WBDX	-150	9	-750	9	AG	1491	3.3	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Aviano
RUN: 2011PP-10 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	17	-15	1.8
2. NW	-17	15	1.8
3. SW	-15	-17	1.8
4. NE	15	17	1.8
5. ES mdblk	150	-15	1.8
6. WN mdblk	-150	15	1.8
7. WS mdblk	-150	-17	1.8
8. EN mdblk	150	17	1.8
9. SE mdblk	17	-150	1.8
10. NW mdblk	-17	150	1.8
11. SW mdblk	-15	-150	1.8
12. NE mdblk	15	150	1.8
13. ES blk	600	-15	1.8
14. WN blk	-600	15	1.8
15. WS blk	-600	-17	1.8
16. EN blk	600	17	1.8
17. SE blk	17	-600	1.8
18. NW blk	-17	600	1.8
19. SW blk	-15	-600	1.8
20. NE blk	15	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Aviano
RUN: 2011PP-11 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	278.	2.5	.0	.0	.0	.0	.0	.0	1.5	.3
2. NW	98.	2.3	.0	.0	.0	.0	.0	.0	.0	.2
3. SW	280.	2.3	.0	.0	.0	.0	.0	.0	1.8	.0
4. NE	100.	2.1	.0	.0	.0	.0	.0	.0	.0	.2
5. ES mdblk	279.	2.2	.0	.0	.0	.0	.0	.0	.1	1.3
6. WN mdblk	99.	2.1	.0	.0	.0	.0	.0	.0	.4	.2
7. WS mdblk	81.	2.5	.0	.0	.0	.0	.0	.0	1.8	.0
8. EN mdblk	261.	2.4	.0	.0	.0	.0	.0	.0	.3	.2
9. SE mdblk	352.	.6	.2	.0	.0	.0	.0	.1	.0	.0
10. NW mdblk	174.	.5	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	8.	.6	.0	.0	.0	.0	.1	.0	.0	.0
12. NE mdblk	185.	.5	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	277.	1.5	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	97.	1.4	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	83.	1.4	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	263.	1.4	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	354.	.4	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	175.	.3	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	6.	.4	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	185.	.3	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Aviano
RUN: 2011PP-11 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.2	.0	.0	.0	.0	.0	.1	.0	.0	.2
2. NW	.0	1.4	.2	.0	.0	.0	.0	.0	.0	.2	.1	.0
3. SW	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.2
4. NE	.0	1.6	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0
5. ES mdblk	.0	.4	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.1	1.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.3	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	1.6	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.3	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.3	.0	.0	.9
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.3
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.3	.9	.0
17. SE blk	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Aviano
RUN: 2011PP-11 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	91. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	.0 PPM		
SIGTH=	10. DEGREES	TEMP=	10.0 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Vista Gr NBA	7	-150	7	0	AG	157	5.9	.0	10.0
B. Vista Gr NBD	7	0	7	150	AG	129	3.8	.0	10.0
C. Vista Gr NBL	5	-150	0	0	AG	51	6.4	.0	10.0
D. Vista Gr SBA	-7	150	-7	0	AG	45	5.9	.0	10.0
E. Vista Gr SBD	-7	0	-7	-150	AG	214	3.9	.0	10.0
F. Vista Gr SBL	-5	150	0	0	AG	40	6.4	.0	10.0
G. Lone Tre EBA	-150	-9	0	-9	AG	2175	6.8	.0	13.5
H. Lone Tre EBD	0	-9	150	-9	AG	2268	4.8	.0	10.0
I. Lone Tre EBL	-150	-5	0	0	AG	46	6.4	.0	10.0
J. Lone Tre WBA	150	9	0	9	AG	1878	6.8	.0	13.5
K. Lone Tre WBD	0	9	-150	9	AG	1908	4.8	.0	10.0
L. Lone Tre WBL	150	5	0	0	AG	127	6.4	.0	10.0
M. Vista G NBAX	7	-750	7	-150	AG	208	3.3	.0	10.0
N. Vista G NBDX	7	150	7	750	AG	129	3.3	.0	10.0
O. Vista G SBAX	-7	750	-7	150	AG	85	3.3	.0	10.0
P. Vista G SBDX	-7	-150	-7	-750	AG	214	3.3	.0	10.0
Q. Lone Tr EBAX	-750	-9	-150	-9	AG	2221	3.3	.0	13.5
R. Lone Tr EBDX	150	-9	750	-9	AG	2268	3.3	.0	10.0
S. Lone Tr WBAX	750	9	150	9	AG	2005	3.3	.0	13.5
T. Lone Tr WBDX	-150	9	-750	9	AG	1908	3.3	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Aviano
RUN: 2011PP-11 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	14	-15	1.8
2. NW	-14	15	1.8
3. SW	-14	-17	1.8
4. NE	14	17	1.8
5. ES mdblk	150	-15	1.8
6. WN mdblk	-150	15	1.8
7. WS mdblk	-150	-17	1.8
8. EN mdblk	150	17	1.8
9. SE mdblk	14	-150	1.8
10. NW mdblk	-14	150	1.8
11. SW mdblk	-14	-150	1.8
12. NE mdblk	14	150	1.8
13. ES blk	600	-15	1.8
14. WN blk	-600	15	1.8
15. WS blk	-600	-17	1.8
16. EN blk	600	17	1.8
17. SE blk	14	-600	1.8
18. NW blk	-14	600	1.8
19. SW blk	-14	-600	1.8
20. NE blk	14	600	1.8

JOB: Aviano
RUN: 2011PP-12 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	278.	2.4	.0	.0	.0	.0	.0	.0	1.4	.4
2. NW	98.	2.2	.0	.0	.0	.0	.0	.0	.0	.2
3. SW	280.	2.3	.0	.0	.0	.0	.0	.0	1.8	.0
4. NE	100.	2.1	.0	.0	.0	.0	.0	.0	.0	.2
5. ES mdblk	279.	2.1	.0	.0	.0	.0	.0	.0	.1	1.3
6. WN mdblk	99.	2.0	.0	.0	.0	.0	.0	.0	.4	.2
7. WS mdblk	81.	2.5	.0	.0	.0	.0	.0	.0	1.8	.0
8. EN mdblk	261.	2.3	.0	.0	.0	.0	.0	.0	.3	.2
9. SE mdblk	347.	.4	.0	.0	.0	.0	.0	.0	.2	.0
10. NW mdblk	176.	.4	.0	.0	.0	.0	.0	.0	.1	.0
11. SW mdblk	11.	.4	.0	.0	.0	.0	.0	.0	.0	.1
12. NE mdblk	185.	.4	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	277.	1.5	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	97.	1.4	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	83.	1.4	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	263.	1.4	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	355.	.3	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	178.	.2	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	5.	.3	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	183.	.2	.0	.0	.0	.0	.0	.0	.0	.0

JOB: Aviano
RUN: 2011PP-12 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.2	.0	.0	.0	.0	.0	.1	.0	.0	.2
2. NW	.0	1.4	.2	.0	.0	.0	.0	.0	.0	.2	.1	.0
3. SW	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.2
4. NE	.0	1.6	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0
5. ES mdblk	.0	.4	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.1	1.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.3	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	1.6	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.3	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.3	.0	.0	.9
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.3
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.3	.9	.0
17. SE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

JOB: Aviano
RUN: 2011PP-12 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S Z0= 100. CM ALT= 91. (M)
BRG= WORST CASE VD= .0 CM/S
CLAS= 7 (G) VS= .0 CM/S
MIXH= 1000. M AMB= .0 PPM
SIGTH= 10. DEGREES TEMP= 10.0 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION		LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Heidorn	NBA	11	-150	11	0	AG	24	5.9	.0	10.0
B. Heidorn	NBD	11	0	11	150	AG	12	3.8	.0	10.0
C. Heidorn	NBL	9	-150	0	0	AG	84	6.4	.0	10.0
D. Heidorn	SBA	-7	150	-7	0	AG	0	3.3	.0	10.0
E. Heidorn	SBD	-7	0	-7	-150	AG	82	3.8	.0	10.0
F. Heidorn	SBL	-5	150	0	0	AG	9	6.4	.0	10.0
G. Lone Tre	EBA	-150	-9	0	-9	AG	2229	6.8	.0	13.5
H. Lone Tre	EBD	0	-9	150	-9	AG	2209	4.8	.0	10.0
I. Lone Tre	EBL	-150	-5	0	0	AG	3	6.4	.0	10.0
J. Lone Tre	WBA	150	9	0	9	AG	1902	6.8	.0	13.5
K. Lone Tre	WBD	0	9	-150	9	AG	1978	4.8	.0	10.0
L. Lone Tre	WBL	150	5	0	0	AG	30	6.4	.0	10.0
M. Heidorn	NBAX	11	-750	11	-150	AG	108	3.3	.0	10.0
N. Heidorn	NBDX	11	150	11	750	AG	12	3.3	.0	10.0
O. Heidorn	SBAX	-7	750	-7	150	AG	9	3.3	.0	10.0
P. Heidorn	SBDX	-7	-150	-7	-750	AG	82	3.3	.0	10.0
Q. Lone Tr	EBAX	-750	-9	-150	-9	AG	2232	3.3	.0	13.5
R. Lone Tr	EBDX	150	-9	750	-9	AG	2209	3.3	.0	10.0
S. Lone Tr	WBAX	750	9	150	9	AG	1932	3.3	.0	13.5
T. Lone Tr	WBDX	-150	9	-750	9	AG	1978	3.3	.0	10.0

JOB: Aviano
RUN: 2011PP-12 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	17	-15	1.8
2. NW	-14	15	1.8
3. SW	-14	-17	1.8
4. NE	17	17	1.8
5. ES mdblk	150	-15	1.8
6. WN mdblk	-150	15	1.8
7. WS mdblk	-150	-17	1.8
8. EN mdblk	150	17	1.8
9. SE mdblk	17	-150	1.8
10. NW mdblk	-14	150	1.8
11. SW mdblk	-14	-150	1.8
12. NE mdblk	17	150	1.8
13. ES blk	600	-15	1.8
14. WN blk	-600	15	1.8
15. WS blk	-600	-17	1.8
16. EN blk	600	17	1.8
17. SE blk	17	-600	1.8
18. NW blk	-14	600	1.8
19. SW blk	-14	-600	1.8
20. NE blk	17	600	1.8

JOB: Aviano
RUN: 2011PP-13 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	279.	2.1	.1	.0	.0	.0	.1	.0	.9	.4
2. NW	98.	2.6	.0	.0	.0	.0	.0	.2	.0	.1
3. SW	75.	2.1	.0	.0	.0	.0	.2	.0	.3	.9
4. NE	257.	2.2	.0	.2	.0	.0	.0	.1	.3	.0
5. ES mdblk	280.	2.1	.0	.0	.0	.0	.0	.0	.0	1.3
6. WN mdblk	98.	2.0	.0	.0	.0	.0	.0	.0	.1	.2
7. WS mdblk	81.	2.1	.0	.0	.0	.0	.0	.0	1.2	.1
8. EN mdblk	260.	2.6	.0	.0	.0	.0	.0	.0	.3	.1
9. SE mdblk	353.	.9	.2	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	170.	1.1	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	8.	1.2	.0	.0	.0	.2	.0	.4	.0	.1
12. NE mdblk	188.	1.1	.0	.0	.0	.0	.5	.0	.0	.0
13. ES blk	278.	1.6	.0	.0	.0	.4	.0	.1	.0	.0
14. WN blk	97.	1.4	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	83.	1.4	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	262.	1.6	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	354.	.6	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	174.	.8	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	6.	.7	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	186.	.7	.0	.0	.0	.0	.0	.0	.0	.0

JOB: Aviano
RUN: 2011PP-13 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.1	.0	.0	.0	.0	.0	.1	.0	.0	.2
2. NW	.0	1.4	.2	.1	.0	.0	.0	.0	.0	.3	.1	.0
3. SW	.0	.4	.0	.1	.0	.0	.0	.0	.0	.0	.1	.0
4. NE	.0	.6	.7	.0	.0	.0	.0	.0	.1	.0	.0	.0
5. ES mdblk	.0	.2	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.1	1.1	.0	.0	.0	.0	.0	.0	.1	.0	.0
7. WS mdblk	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	1.7	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.1	.3	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.3	.0	.0	.9
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.9	.0	.0	.2
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.3	1.0	.0
17. SE blk	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.1	.4	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.0	.0	.0	.3	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.3	.1	.0	.0	.0	.0	.0

JOB: Aviano
RUN: 2011PP-13 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S Z0= 100. CM ALT= 91. (M)
BRG= WORST CASE VD= .0 CM/S
CLAS= 7 (G) VS= .0 CM/S
MIXH= 1000. M AMB= .0 PPM
SIGTH= 10. DEGREES TEMP= 10.0 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Canada V NBA	12	-150	12	0	AG	290	5.9	.0	13.5
B. Canada V NBD	12	0	12	150	AG	646	4.3	.0	10.0
C. Canada V NBL	9	-150	0	0	AG	125	6.4	.0	10.0
D. Canada V SBA	-7	150	-7	0	AG	199	5.9	.0	10.0
E. Canada V SBD	-7	0	-7	-150	AG	534	6.4	.0	10.0
F. Canada V SBL	-5	150	0	0	AG	470	7.0	.0	10.0
G. Lone Tre EBA	-150	-14	0	-14	AG	2042	5.5	.0	17.0
H. Lone Tre EBD	0	-14	150	-14	AG	2619	4.2	.0	13.5
I. Lone Tre EBL	-150	-9	0	0	AG	189	6.4	.0	10.0
J. Lone Tre WBA	150	12	0	12	AG	2024	6.8	.0	13.5
K. Lone Tre WBD	0	12	-150	12	AG	1894	4.8	.0	10.0
L. Lone Tre WBL	150	9	0	0	AG	354	6.4	.0	10.0
M. Canada NBAX	12	-750	12	-150	AG	415	3.3	.0	13.5
N. Canada NBDX	12	150	12	750	AG	646	3.3	.0	10.0
O. Canada SBAX	-7	750	-7	150	AG	669	3.3	.0	10.0
P. Canada SBDX	-7	-150	-7	-750	AG	534	3.3	.0	10.0
Q. Lone Tr EBAX	-750	-14	-150	-14	AG	2231	3.3	.0	17.0
R. Lone Tr EBDX	150	-14	750	-14	AG	2619	3.3	.0	13.5
S. Lone Tr WBAX	750	12	150	12	AG	2378	3.3	.0	13.5
T. Lone Tr WBDX	-150	12	-750	12	AG	1894	3.3	.0	10.0

JOB: Aviano
RUN: 2011PP-13 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	21	-22	1.8
2. NW	-14	19	1.8
3. SW	-14	-24	1.8
4. NE	19	21	1.8
5. ES mdblk	150	-22	1.8
6. WN mdblk	-150	19	1.8
7. WS mdblk	-150	-24	1.8
8. EN mdblk	150	21	1.8
9. SE mdblk	21	-150	1.8
10. NW mdblk	-14	150	1.8
11. SW mdblk	-14	-150	1.8
12. NE mdblk	19	150	1.8
13. ES blk	600	-22	1.8
14. WN blk	-600	19	1.8
15. WS blk	-600	-24	1.8
16. EN blk	600	21	1.8
17. SE blk	21	-600	1.8
18. NW blk	-14	600	1.8
19. SW blk	-14	-600	1.8
20. NE blk	19	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Aviano
RUN: 2011PP-14 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	277.	3.3	.0	.0	.0	.0	.4	.0	2.1	.0
2. NW	98.	2.6	.0	.0	.0	.0	.0	.0	.0	.2
3. SW	73.	2.6	.0	.0	.0	.0	.6	.0	.6	.5
4. NE	99.	2.7	.0	.0	.0	.0	.0	.0	.0	.2
5. ES mdblk	277.	2.0	.0	.0	.0	.0	.0	.0	.2	.8
6. WN mdblk	100.	2.6	.0	.0	.0	.0	.1	.0	.7	.0
7. WS mdblk	82.	2.9	.0	.0	.0	.0	.0	.0	2.0	.0
8. EN mdblk	262.	3.1	.0	.0	.0	.0	.0	.0	.3	.2
9. SE mdblk	346.	1.0	.0	.0	.0	.0	.7	.0	.2	.0
10. NW mdblk	177.	.8	.0	.0	.0	.1	.2	.0	.1	.0
11. SW mdblk	9.	1.6	.0	.0	.0	.0	1.3	.0	.0	.0
12. NE mdblk	185.	.7	.0	.0	.0	.0	.2	.0	.1	.0
13. ES blk	277.	1.4	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	97.	1.8	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	83.	1.7	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	263.	1.7	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	353.	.6	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	177.	.4	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	6.	.9	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	185.	.3	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Aviano
RUN: 2011PP-14 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.3	.0	.0	.0	.0	.0	.2	.0	.0	.2
2. NW	.0	1.6	.3	.2	.0	.0	.0	.0	.0	.1	.1	.0
3. SW	.0	.7	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	.0	2.0	.0	.2	.0	.0	.0	.0	.0	.1	.1	.0
5. ES mdblk	.0	.5	.2	.1	.0	.0	.0	.0	.0	.0	.0	.1
6. WN mdblk	.0	.0	1.5	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.3	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	2.0	.1	.2	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.8	.4	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.5	.0	.0	1.1
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	1.1	.0	.0	.4
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.3	1.1	.0
17. SE blk	.0	.0	.0	.0	.0	.0	.0	.3	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.0	.0	.0	.6	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Aviano
RUN: 2011PP-14 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S Z0= 100. CM ALT= 91. (M)
BRG= WORST CASE VD= .0 CM/S
CLAS= 7 (G) VS= .0 CM/S
MIXH= 1000. M AMB= .0 PPM
SIGTH= 10. DEGREES TEMP= 10.0 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. SR-4 Byp NBA	0	-150	0	0	AG	0	3.3	.0	10.0
B. SR-4 Byp NBD	0	0	0	150	AG	0	3.3	.0	10.0
C. SR-4 Byp NBL	2	-150	0	0	AG	0	3.3	.0	10.0
D. SR-4 Byp SBA	-7	150	-7	0	AG	121	5.9	.0	10.0
E. SR-4 Byp SBD	-7	0	-7	-150	AG	1315	7.0	.0	10.0
F. SR-4 Byp SBL	-5	150	0	0	AG	111	6.4	.0	10.0
G. Lone Tre EBA	-150	-5	0	-5	AG	2511	6.8	.0	13.5
H. Lone Tre EBD	0	-5	150	-5	AG	1580	3.8	.0	10.0
I. Lone Tre EBL	-150	-2	0	0	AG	0	3.3	.0	10.0
J. Lone Tre WBA	150	7	0	7	AG	2433	6.8	.0	10.0
K. Lone Tre WBD	0	7	-150	7	AG	2554	4.8	.0	10.0
L. Lone Tre WBL	150	5	0	0	AG	273	6.9	.0	10.0
M. SR-4 By NBAX	0	-750	0	-150	AG	0	3.3	.0	10.0
N. SR-4 By NBDX	0	150	0	750	AG	0	3.3	.0	10.0
O. SR-4 By SBAX	-7	750	-7	150	AG	232	3.3	.0	10.0
P. SR-4 By SBDX	-7	-150	-7	-750	AG	1315	3.3	.0	10.0
Q. Lone Tr EBAX	-750	-5	-150	-5	AG	2511	3.3	.0	13.5
R. Lone Tr EBDX	150	-5	750	-5	AG	1580	3.3	.0	10.0
S. Lone Tr WBAX	750	7	150	7	AG	2706	3.3	.0	10.0
T. Lone Tr WBDX	-150	7	-750	7	AG	2554	3.3	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Aviano
RUN: 2011PP-14 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	7	-12	1.8
2. NW	-14	14	1.8
3. SW	-14	-14	1.8
4. NE	7	14	1.8
5. ES mdblk	150	-12	1.8
6. WN mdblk	-150	14	1.8
7. WS mdblk	-150	-14	1.8
8. EN mdblk	150	14	1.8
9. SE mdblk	7	-150	1.8
10. NW mdblk	-14	150	1.8
11. SW mdblk	-14	-150	1.8
12. NE mdblk	7	150	1.8
13. ES blk	600	-12	1.8
14. WN blk	-600	14	1.8
15. WS blk	-600	-14	1.8
16. EN blk	600	14	1.8
17. SE blk	7	-600	1.8
18. NW blk	-14	600	1.8
19. SW blk	-14	-600	1.8
20. NE blk	7	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Aviano
RUN: 2011PP-15 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	354.	.2	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	95.	.2	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	6.	.1	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	354.	.2	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	280.	.1	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	91.	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	88.	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	262.	.1	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	359.	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	169.	.1	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	2.	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	188.	.1	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	276.	.1	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	89.	.0	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	88.	.0	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	265.	.1	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	1.	.0	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	174.	.1	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	2.	.0	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	185.	.1	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Aviano
RUN: 2011PP-15 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Aviano
RUN: 2011PP-15 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S
BRG= WORST CASE
CLAS= 7 (G)
MIXH= 1000. M
SIGTH= 10. DEGREES
Z0= 100. CM
VD= .0 CM/S
VS= .0 CM/S
AMB= .0 PPM
TEMP= 10.0 DEGREE (C)
ALT= 91. (M)

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. High Sch NBA	0	-150	0	0	AG	0	3.3	.0	10.0
B. High Sch NBD	0	0	0	150	AG	80	3.5	.0	10.0
C. High Sch NBL	2	-150	0	0	AG	0	3.3	.0	10.0
D. High Sch SBA	-4	150	-4	0	AG	0	3.3	.0	10.0
E. High Sch SBD	-4	0	-4	-150	AG	0	3.3	.0	10.0
F. High Sch SBL	-2	150	0	0	AG	80	6.4	.0	10.0
G. Sand Cre EBA	-150	0	0	0	AG	0	3.3	.0	10.0
H. Sand Cre EBD	0	0	150	0	AG	80	3.5	.0	10.0
I. Sand Cre EBL	-150	-2	0	0	AG	0	3.3	.0	10.0
J. Sand Cre WBA	150	4	0	4	AG	80	5.1	.0	10.0
K. Sand Cre WBD	0	4	-150	4	AG	0	3.3	.0	10.0
L. Sand Cre WBL	150	2	0	0	AG	0	3.3	.0	10.0
M. High Sc NBAX	0	-750	0	-150	AG	0	3.3	.0	10.0
N. High Sc NBDX	0	150	0	750	AG	80	3.3	.0	10.0
O. High Sc SBAX	-4	750	-4	150	AG	80	3.3	.0	10.0
P. High Sc SBDX	-4	-150	-4	-750	AG	0	3.3	.0	10.0
Q. Sand Cr EBAX	-750	0	-150	0	AG	0	3.3	.0	10.0
R. Sand Cr EBDX	150	0	750	0	AG	80	3.3	.0	10.0
S. Sand Cr WBAX	750	4	150	4	AG	80	3.3	.0	10.0
T. Sand Cr WBDX	-150	4	-750	4	AG	0	3.3	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Aviano
RUN: 2011PP-15 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	7	-7	1.8
2. NW	-10	10	1.8
3. SW	-10	-7	1.8
4. NE	7	10	1.8
5. ES mdblk	150	-7	1.8
6. WN mdblk	-150	10	1.8
7. WS mdblk	-150	-7	1.8
8. EN mdblk	150	10	1.8
9. SE mdblk	7	-150	1.8
10. NW mdblk	-10	150	1.8
11. SW mdblk	-10	-150	1.8
12. NE mdblk	7	150	1.8
13. ES blk	600	-7	1.8
14. WN blk	-600	10	1.8
15. WS blk	-600	-7	1.8
16. EN blk	600	10	1.8
17. SE blk	7	-600	1.8
18. NW blk	-10	600	1.8
19. SW blk	-10	-600	1.8
20. NE blk	7	600	1.8

JOB: Aviano
RUN: 2025nP-01 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	278.	.8	.0	.0	.0	.0	.0	.0	.3	.1
2. NW	98.	.7	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	79.	.7	.0	.0	.0	.0	.0	.0	.1	.3
4. NE	259.	.7	.0	.0	.0	.0	.0	.0	.1	.0
5. ES mdblk	278.	.7	.0	.0	.0	.0	.0	.0	.0	.4
6. WN mdblk	98.	.6	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	82.	.7	.0	.0	.0	.0	.0	.0	.4	.0
8. EN mdblk	261.	.7	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	351.	.4	.1	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	172.	.3	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	8.	.4	.0	.0	.0	.0	.2	.0	.0	.0
12. NE mdblk	187.	.4	.0	.1	.0	.0	.0	.0	.0	.0
13. ES blk	277.	.5	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	97.	.5	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	83.	.5	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	263.	.5	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	354.	.3	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	174.	.3	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	7.	.3	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	186.	.3	.0	.0	.0	.0	.0	.0	.0	.0

JOB: Aviano
RUN: 2025nP-01 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	.0	.1	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.3	.1	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.3
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.3	.0	.0	.0
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.3	.0
17. SE blk	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0

JOB: Aviano
RUN: 2025nP-01 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S Z0= 100. CM ALT= 91. (M)
BRG= WORST CASE VD= .0 CM/S
CLAS= 7 (G) VS= .0 CM/S
MIXH= 1000. M AMB= .0 PPM
SIGTH= 10. DEGREES TEMP= 10.0 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Deer Val NBA	12	-150	12	0	AG	514	1.8	.0	13.5
B. Deer Val NBD	12	0	12	150	AG	789	1.3	.0	10.0
C. Deer Val NBL	9	-150	0	0	AG	373	2.1	.0	10.0
D. Deer Val SBA	-9	150	-9	0	AG	379	1.7	.0	13.5
E. Deer Val SBD	-9	0	-9	-150	AG	851	1.3	.0	10.0
F. Deer Val SBL	-5	150	0	0	AG	314	2.2	.0	10.0
G. Lone Tre EBA	-150	-9	0	-9	AG	1615	2.2	.0	13.5
H. Lone Tre EBD	0	-9	150	-9	AG	1768	1.8	.0	10.0
I. Lone Tre EBL	-150	-5	0	0	AG	124	2.1	.0	10.0
J. Lone Tre WBA	150	9	0	9	AG	1498	2.1	.0	13.5
K. Lone Tre WBD	0	9	-150	9	AG	1594	1.6	.0	10.0
L. Lone Tre WBL	150	5	0	0	AG	185	2.1	.0	10.0
M. Deer Va NBAX	12	-750	12	-150	AG	887	1.2	.0	13.5
N. Deer Va NBDX	12	150	12	750	AG	789	1.2	.0	10.0
O. Deer Va SBAX	-9	750	-9	150	AG	693	1.2	.0	13.5
P. Deer Va SBDX	-9	-150	-9	-750	AG	851	1.2	.0	10.0
Q. Lone Tr EBAX	-750	-9	-150	-9	AG	1739	1.2	.0	13.5
R. Lone Tr EBDX	150	-9	750	-9	AG	1768	1.2	.0	10.0
S. Lone Tr WBAX	750	9	150	9	AG	1683	1.2	.0	13.5
T. Lone Tr WBDX	-150	9	-750	9	AG	1594	1.2	.0	10.0

JOB: Aviano
RUN: 2025nP-01 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	21	-15	1.8
2. NW	-17	15	1.8
3. SW	-15	-17	1.8
4. NE	19	17	1.8
5. ES mdblk	150	-15	1.8
6. WN mdblk	-150	15	1.8
7. WS mdblk	-150	-17	1.8
8. EN mdblk	150	17	1.8
9. SE mdblk	21	-150	1.8
10. NW mdblk	-17	150	1.8
11. SW mdblk	-15	-150	1.8
12. NE mdblk	19	150	1.8
13. ES blk	600	-15	1.8
14. WN blk	-600	15	1.8
15. WS blk	-600	-17	1.8
16. EN blk	600	17	1.8
17. SE blk	21	-600	1.8
18. NW blk	-17	600	1.8
19. SW blk	-15	-600	1.8
20. NE blk	19	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Aviano
RUN: 2025nP-02 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	351.	.3	.0	.1	.0	.0	.0	.0	.0	.0
2. NW	8.	.3	.0	.0	.0	.2	.0	.0	.0	.0
3. SW	7.	.3	.0	.0	.0	.2	.0	.0	.0	.0
4. NE	187.	.3	.2	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	281.	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	93.	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	84.	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	262.	.1	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	352.	.3	.2	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	172.	.3	.0	.0	.0	.2	.0	.0	.0	.0
11. SW mdblk	7.	.3	.0	.0	.0	.2	.0	.0	.0	.0
12. NE mdblk	188.	.3	.0	.2	.0	.0	.0	.0	.0	.0
13. ES blk	276.	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	93.	.0	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	86.	.0	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	265.	.0	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	354.	.2	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	173.	.2	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	7.	.3	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	187.	.3	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Aviano
RUN: 2025nP-02 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Aviano
RUN: 2025nP-02 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S Z0= 100. CM ALT= 91. (M)
BRG= WORST CASE VD= .0 CM/S
CLAS= 7 (G) VS= .0 CM/S
MIXH= 1000. M AMB= .0 PPM
SIGTH= 10. DEGREES TEMP= 10.0 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Deer Val NBA	9	-150	9	0	AG	801	1.7	.0	13.5
B. Deer Val NBD	9	0	9	150	AG	937	1.3	.0	10.0
C. Deer Val NBL	5	-150	0	0	AG	15	2.1	.0	10.0
D. Deer Val SBA	-9	150	-9	0	AG	820	1.7	.0	13.5
E. Deer Val SBD	-9	0	-9	-150	AG	849	1.3	.0	10.0
F. Deer Val SBL	-5	150	0	0	AG	32	2.1	.0	10.0
G. Marita D EBA	-150	-7	0	-7	AG	8	1.9	.0	10.0
H. Marita D EBD	0	-7	150	-7	AG	37	1.4	.0	10.0
I. Marita D EBL	-150	-5	0	0	AG	15	2.1	.0	10.0
J. Marita D WBA	150	7	0	7	AG	130	1.9	.0	10.0
K. Marita D WBD	0	7	-150	7	AG	40	1.4	.0	10.0
L. Marita D WBL	150	5	0	0	AG	42	2.1	.0	10.0
M. Deer Va NBAX	9	-750	9	-150	AG	816	1.2	.0	13.5
N. Deer Va NBDX	9	150	9	750	AG	937	1.2	.0	10.0
O. Deer Va SBAX	-9	750	-9	150	AG	852	1.2	.0	13.5
P. Deer Va SBDX	-9	-150	-9	-750	AG	849	1.2	.0	10.0
Q. Marita EBAX	-750	-7	-150	-7	AG	23	1.2	.0	10.0
R. Marita EBDX	150	-7	750	-7	AG	37	1.2	.0	10.0
S. Marita WBAX	750	7	150	7	AG	172	1.2	.0	10.0
T. Marita WBDX	-150	7	-750	7	AG	40	1.2	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Aviano
RUN: 2025nP-02 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	17	-14	1.8
2. NW	-17	14	1.8
3. SW	-15	-14	1.8
4. NE	15	14	1.8
5. ES mdblk	150	-14	1.8
6. WN mdblk	-150	14	1.8
7. WS mdblk	-150	-14	1.8
8. EN mdblk	150	14	1.8
9. SE mdblk	17	-150	1.8
10. NW mdblk	-17	150	1.8
11. SW mdblk	-15	-150	1.8
12. NE mdblk	15	150	1.8
13. ES blk	600	-14	1.8
14. WN blk	-600	14	1.8
15. WS blk	-600	-14	1.8
16. EN blk	600	14	1.8
17. SE blk	17	-600	1.8
18. NW blk	-17	600	1.8
19. SW blk	-15	-600	1.8
20. NE blk	15	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Aviano
RUN: 2011nP-03 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	350.	.9	.0	.3	.0	.1	.0	.0	.0	.0
2. NW	170.	.8	.1	.0	.0	.0	.3	.0	.0	.0
3. SW	7.	.9	.0	.0	.0	.4	.0	.0	.0	.0
4. NE	187.	.9	.5	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	277.	.4	.0	.0	.0	.0	.0	.0	.0	.2
6. WN mdblk	97.	.4	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	82.	.4	.0	.0	.0	.0	.0	.0	.1	.0
8. EN mdblk	264.	.4	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	352.	.9	.5	.0	.0	.1	.0	.0	.0	.0
10. NW mdblk	172.	.9	.1	.0	.0	.5	.0	.0	.0	.0
11. SW mdblk	7.	.8	.0	.0	.0	.0	.3	.0	.0	.0
12. NE mdblk	188.	.8	.0	.4	.0	.1	.0	.0	.0	.0
13. ES blk	276.	.4	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	96.	.3	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	84.	.3	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	264.	.3	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	354.	.6	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	174.	.7	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	6.	.6	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	187.	.7	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Aviano
RUN: 2011nP-03 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0
4. NE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0
17. SE blk	.0	.0	.0	.0	.4	.0	.0	.1	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.1	.4	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.1	.0	.0	.3	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.4	.2	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Aviano
RUN: 2011nP-03 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S Z0= 100. CM ALT= 91. (M)
BRG= WORST CASE VD= .0 CM/S
CLAS= 7 (G) VS= .0 CM/S
MIXH= 1000. M AMB= .0 PPH
SIGTH= 10. DEGREES TEMP= 10.0 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Deer Val NBA	9	-150	9	0	AG	709	5.4	.0	13.5
B. Deer Val NBD	9	0	9	150	AG	826	3.7	.0	10.0
C. Deer Val NBL	5	-150	0	0	AG	89	6.4	.0	10.0
D. Deer Val SBA	-9	150	-9	0	AG	688	5.4	.0	13.5
E. Deer Val SBD	-9	0	-9	-150	AG	647	3.6	.0	10.0
F. Deer Val SBL	-5	150	0	0	AG	147	6.4	.0	10.0
G. Mammoth EBA	-150	-7	0	-7	AG	139	5.1	.0	10.0
H. Mammoth EBD	0	-7	150	-7	AG	301	3.5	.0	10.0
I. Mammoth EBL	-150	-5	0	0	AG	84	6.4	.0	10.0
J. Mammoth WBA	150	7	0	7	AG	189	5.1	.0	10.0
K. Mammoth WBD	0	7	-150	7	AG	289	3.5	.0	10.0
L. Mammoth WBL	150	5	0	0	AG	18	6.4	.0	10.0
M. Deer Va NBAX	9	-750	9	-150	AG	798	3.3	.0	13.5
N. Deer Va NBDX	9	150	9	750	AG	826	3.3	.0	10.0
O. Deer Va SBAX	-9	750	-9	150	AG	835	3.3	.0	13.5
P. Deer Va SBDX	-9	-150	-9	-750	AG	647	3.3	.0	10.0
Q. Mammoth EBAX	-750	-7	-150	-7	AG	223	3.3	.0	10.0
R. Mammoth EBDX	150	-7	750	-7	AG	301	3.3	.0	10.0
S. Mammoth WBAX	750	7	150	7	AG	207	3.3	.0	10.0
T. Mammoth WBDX	-150	7	-750	7	AG	289	3.3	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Aviano
RUN: 2011nP-03 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	17	-14	1.8
2. NW	-17	14	1.8
3. SW	-15	-14	1.8
4. NE	15	14	1.8
5. ES mdblk	150	-14	1.8
6. WN mdblk	-150	14	1.8
7. WS mdblk	-150	-14	1.8
8. EN mdblk	150	14	1.8
9. SE mdblk	17	-150	1.8
10. NW mdblk	-17	150	1.8
11. SW mdblk	-15	-150	1.8
12. NE mdblk	15	150	1.8
13. ES blk	600	-14	1.8
14. WN blk	-600	14	1.8
15. WS blk	-600	-14	1.8
16. EN blk	600	14	1.8
17. SE blk	17	-600	1.8
18. NW blk	-17	600	1.8
19. SW blk	-15	-600	1.8
20. NE blk	15	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Aviano
RUN: 2025nP-04 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	189.	.4	.3	.0	.0	.0	.0	.0	.0	.0
2. NW	171.	.5	.0	.0	.0	.0	.2	.0	.0	.0
3. SW	8.	.5	.0	.0	.0	.2	.0	.0	.0	.0
4. NE	187.	.5	.2	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	275.	.1	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	100.	.2	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	82.	.2	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	264.	.2	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	351.	.5	.3	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	173.	.5	.0	.0	.0	.3	.0	.0	.0	.0
11. SW mdblk	0.	.5	.0	.0	.0	.0	.3	.0	.0	.0
12. NE mdblk	188.	.4	.0	.2	.0	.0	.0	.0	.0	.0
13. ES blk	273.	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	96.	.1	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	84.	.1	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	265.	.0	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	353.	.4	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	173.	.3	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	7.	.4	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	187.	.3	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Aviano
RUN: 2025nP-04 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Aviano
RUN: 2025nP-04 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S Z0= 100. CM ALT= 91. (M)
BRG= WORST CASE VD= .0 CM/S
CLAS= 7 (G) VS= .0 CM/S
MIXH= 1000. M AMB= .0 PPM
SIGTH= 10. DEGREES TEMP= 10.0 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Deer Val NBA	9	-150	9	0	AG	1139	1.8	.0	13.5
B. Deer Val NBD	9	0	9	150	AG	1212	1.3	.0	10.0
C. Deer Val NBL	5	-150	0	0	AG	239	2.2	.0	10.0
D. Deer Val SBA	-11	150	-11	0	AG	941	2.1	.0	10.0
E. Deer Val SBD	-11	0	-11	-150	AG	1225	1.6	.0	10.0
F. Deer Val SBL	-9	150	0	0	AG	45	2.1	.0	10.0
G. Mammoth EBA	-150	-7	0	-7	AG	257	2.0	.0	10.0
H. Mammoth EBD	0	-7	150	-7	AG	79	1.4	.0	10.0
I. Mammoth EBL	-150	-5	0	0	AG	30	2.1	.0	10.0
J. Mammoth WBA	150	7	0	7	AG	80	1.9	.0	10.0
K. Mammoth WBD	0	7	-150	7	AG	271	1.4	.0	10.0
L. Mammoth WBL	150	5	0	0	AG	56	2.1	.0	10.0
M. Deer Va NBAX	9	-750	9	-150	AG	1378	1.2	.0	13.5
N. Deer Va NBDX	9	150	9	750	AG	1212	1.2	.0	10.0
O. Deer Va SBAX	-11	750	-11	150	AG	986	1.2	.0	10.0
P. Deer Va SBDX	-11	-150	-11	-750	AG	1225	1.2	.0	10.0
Q. Mammoth EBAX	-750	-7	-150	-7	AG	287	1.2	.0	10.0
R. Mammoth EBDX	150	-7	750	-7	AG	79	1.2	.0	10.0
S. Mammoth WBAX	750	7	150	7	AG	136	1.2	.0	10.0
T. Mammoth WBDX	-150	7	-750	7	AG	271	1.2	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Aviano
RUN: 2025nP-04 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	17	-14	1.8
2. NW	-17	14	1.8
3. SW	-17	-14	1.8
4. NE	15	14	1.8
5. ES mdblk	150	-14	1.8
6. WN mdblk	-150	14	1.8
7. WS mdblk	-150	-14	1.8
8. EN mdblk	150	14	1.8
9. SE mdblk	17	-150	1.8
10. NW mdblk	-17	150	1.8
11. SW mdblk	-17	-150	1.8
12. NE mdblk	15	150	1.8
13. ES blk	600	-14	1.8
14. WN blk	-600	14	1.8
15. WS blk	-600	-14	1.8
16. EN blk	600	14	1.8
17. SE blk	17	-600	1.8
18. NW blk	-17	600	1.8
19. SW blk	-17	-600	1.8
20. NE blk	15	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Aviano
RUN: 2025nP-05 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	278.	.5	.0	.0	.0	.0	.0	.0	.3	.0
2. NW	98.	.5	.0	.0	.0	.0	.0	.0	.0	.1
3. SW	278.	.5	.0	.0	.0	.0	.0	.0	.3	.0
4. NE	98.	.5	.0	.0	.0	.0	.0	.0	.0	.1
5. ES mdblk	277.	.5	.0	.0	.0	.0	.0	.0	.0	.2
6. WN mdblk	97.	.5	.0	.0	.0	.0	.0	.0	.2	.0
7. WS mdblk	83.	.5	.0	.0	.0	.0	.0	.0	.3	.0
8. EN mdblk	263.	.5	.0	.0	.0	.0	.0	.0	.0	.1
9. SE mdblk	323.	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	143.	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	36.	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	216.	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	276.	.4	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	96.	.3	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	84.	.4	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	264.	.3	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	359.	.0	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	180.	.0	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	360.	.0	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	181.	.0	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Aviano
RUN: 2025nP-05 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.1	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.2
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.1
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.2	.0
17. SE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Aviano
RUN: 2025nP-05 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S Z0= 100. CM ALT= 91. (M)
BRG= WORST CASE VD= .0 CM/S
CLAS= 7 (G) VS= .0 CM/S
MIXH= 1000. M AMB= .0 PPM
SIGTH= 10. DEGREES TEMP= 10.0 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Project NBA	0	-150	0	0	AG	0	1.2	.0	10.0
B. Project NBD	0	0	0	150	AG	0	1.2	.0	10.0
C. Project NBL	2	-150	0	0	AG	0	1.2	.0	10.0
D. Project SBA	0	150	0	0	AG	0	1.2	.0	10.0
E. Project SBD	0	0	0	-150	AG	0	1.2	.0	10.0
F. Project SBL	-2	150	0	0	AG	0	1.2	.0	10.0
G. Sand Cre EBA	-150	-2	0	-2	AG	1016	2.1	.0	10.0
H. Sand Cre EBD	0	-2	150	-2	AG	1016	1.6	.0	10.0
I. Sand Cre EBL	-150	-2	0	0	AG	0	1.2	.0	10.0
J. Sand Cre WBA	150	2	0	2	AG	978	2.1	.0	10.0
K. Sand Cre WBD	0	2	-150	2	AG	978	1.6	.0	10.0
L. Sand Cre WBL	150	2	0	0	AG	0	1.2	.0	10.0
M. Project NBAX	0	-750	0	-150	AG	0	1.2	.0	10.0
N. Project NBDX	0	150	0	750	AG	0	1.2	.0	10.0
O. Project SBAX	0	750	0	150	AG	0	1.2	.0	10.0
P. Project SBDX	0	-150	0	-750	AG	0	1.2	.0	10.0
Q. Sand Cr EBAX	-750	-2	-150	-2	AG	1016	1.2	.0	10.0
R. Sand Cr EBDX	150	-2	750	-2	AG	1016	1.2	.0	10.0
S. Sand Cr WBAX	750	2	150	2	AG	978	1.2	.0	10.0
T. Sand Cr WBDX	-150	2	-750	2	AG	978	1.2	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Aviano
RUN: 2025nP-05 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	7	-8	1.8
2. NW	-7	8	1.8
3. SW	-7	-8	1.8
4. NE	7	8	1.8
5. ES mdblk	150	-8	1.8
6. WN mdblk	-150	8	1.8
7. WS mdblk	-150	-8	1.8
8. EN mdblk	150	8	1.8
9. SE mdblk	7	-150	1.8
10. NW mdblk	-7	150	1.8
11. SW mdblk	-7	-150	1.8
12. NE mdblk	7	150	1.8
13. ES blk	600	-8	1.8
14. WN blk	-600	8	1.8
15. WS blk	-600	-8	1.8
16. EN blk	600	8	1.8
17. SE blk	7	-600	1.8
18. NW blk	-7	600	1.8
19. SW blk	-7	-600	1.8
20. NE blk	7	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Aviano
RUN: 2025nP-06 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	278.	.5	.0	.0	.0	.0	.0	.0	.1	.0
2. NW	171.	.7	.0	.0	.0	.0	.3	.0	.0	.0
3. SW	8.	.7	.0	.0	.0	.3	.0	.0	.0	.0
4. NE	262.	.6	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	275.	.3	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	100.	.5	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	78.	.4	.0	.0	.0	.0	.0	.0	.2	.0
8. EN mdblk	265.	.3	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	352.	.4	.1	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	173.	.6	.0	.0	.0	.4	.0	.0	.0	.0
11. SW mdblk	7.	.5	.0	.0	.0	.0	.3	.0	.0	.0
12. NE mdblk	188.	.5	.0	.2	.0	.0	.0	.0	.0	.0
13. ES blk	275.	.2	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	97.	.3	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	83.	.3	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	265.	.2	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	353.	.3	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	174.	.3	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	6.	.3	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	187.	.3	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Aviano
RUN: 2025nP-06 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Aviano
RUN: 2025nP-06 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S Z0= 100. CM ALT= 91. (M)
BRG= WORST CASE VD= .0 CM/S
CLAS= 7 (G) VS= .0 CM/S
MIXH= 1000. M AMB= .0 PPM
SIGTH= 10. DEGREES TEMP= 10.0 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Hillcres NBA	7	-150	7	0	AG	439	1.8	.0	10.0
B. Hillcres NBD	7	0	7	150	AG	845	1.8	.0	10.0
C. Hillcres NBL	5	-150	0	0	AG	242	2.2	.0	10.0
D. Hillcres SBA	-7	150	-7	0	AG	1213	2.2	.0	10.0
E. Hillcres SBD	-7	0	-7	-150	AG	1203	2.0	.0	10.0
F. Hillcres SBL	-5	150	0	0	AG	29	2.1	.0	10.0
G. Sand Cre EBA	-150	-7	0	-7	AG	561	1.9	.0	10.0
H. Sand Cre EBD	0	-7	150	-7	AG	305	1.3	.0	10.0
I. Sand Cre EBL	-150	-5	0	0	AG	453	2.2	.0	10.0
J. Sand Cre WBA	150	7	0	7	AG	263	1.8	.0	10.0
K. Sand Cre WBD	0	7	-150	7	AG	978	2.0	.0	10.0
L. Sand Cre WBL	150	5	0	0	AG	131	2.1	.0	10.0
M. Hillcre NBAX	7	-750	7	-150	AG	681	1.2	.0	10.0
N. Hillcre NBDX	7	150	7	750	AG	845	1.2	.0	10.0
O. Hillcre SBAX	-7	750	-7	150	AG	1242	1.2	.0	10.0
P. Hillcre SBDX	-7	-150	-7	-750	AG	1203	1.2	.0	10.0
Q. Sand Cr EBAX	-750	-7	-150	-7	AG	1014	1.2	.0	10.0
R. Sand Cr EBDX	150	-7	750	-7	AG	305	1.2	.0	10.0
S. Sand Cr WBAX	750	7	150	7	AG	394	1.2	.0	10.0
T. Sand Cr WBDX	-150	7	-750	7	AG	978	1.2	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Aviano
RUN: 2025nP-06 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	14	-14	1.8
2. NW	-14	14	1.8
3. SW	-14	-14	1.8
4. NE	14	14	1.8
5. ES mdblk	150	-14	1.8
6. WN mdblk	-150	14	1.8
7. WS mdblk	-150	-14	1.8
8. EN mdblk	150	14	1.8
9. SE mdblk	14	-150	1.8
10. NW mdblk	-14	150	1.8
11. SW mdblk	-14	-150	1.8
12. NE mdblk	14	150	1.8
13. ES blk	600	-14	1.8
14. WN blk	-600	14	1.8
15. WS blk	-600	-14	1.8
16. EN blk	600	14	1.8
17. SE blk	14	-600	1.8
18. NW blk	-14	600	1.8
19. SW blk	-14	-600	1.8
20. NE blk	14	600	1.8

JOB: Aviano
RUN: 2025nP-07 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	350.	.4	.0	.1	.0	.0	.0	.0	.0	.0
2. NW	8.	.4	.0	.0	.0	.2	.0	.0	.0	.0
3. SW	7.	.4	.0	.0	.0	.2	.0	.0	.0	.0
4. NE	187.	.4	.2	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	283.	.2	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	92.	.1	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	87.	.1	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	259.	.2	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	353.	.3	.2	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	172.	.4	.0	.0	.0	.2	.0	.0	.0	.0
11. SW mdblk	7.	.4	.0	.0	.0	.2	.0	.0	.0	.0
12. NE mdblk	188.	.3	.0	.2	.0	.0	.0	.0	.0	.0
13. ES blk	277.	.1	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	90.	.0	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	88.	.0	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	264.	.1	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	353.	.3	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	173.	.3	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	7.	.3	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	187.	.3	.0	.0	.0	.0	.0	.0	.0	.0

JOB: Aviano
RUN: 2025nP-07 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0

JOB: Aviano
RUN: 2025nP-07 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S Z0= 100. CM ALT= 91. (M)
BRG= WORST CASE VD= .0 CM/S
CLAS= 7 (G) VS= .0 CM/S
MIXH= 1000. M AMB= .0 PPM
SIGTH= 10. DEGREES TEMP= 10.0 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Hillcres NBA	9	-150	9	0	AG	850	1.7	.0	13.5
B. Hillcres NBD	9	0	9	150	AG	992	1.3	.0	10.0
C. Hillcres NBL	5	-150	0	0	AG	0	1.2	.0	10.0
D. Hillcres SBA	-9	150	-9	0	AG	1068	1.8	.0	13.5
E. Hillcres SBD	-9	0	-9	-150	AG	1239	1.3	.0	10.0
F. Hillcres SBL	-5	150	0	0	AG	144	2.1	.0	10.0
G. Project EBA	-150	-5	0	-5	AG	0	1.2	.0	10.0
H. Project EBD	0	-5	150	-5	AG	216	1.4	.0	10.0
I. Project EBL	-150	-5	0	0	AG	0	1.2	.0	10.0
J. Project WBA	150	5	0	5	AG	214	2.0	.0	10.0
K. Project WBD	0	5	-150	5	AG	0	1.2	.0	10.0
L. Project WBL	150	5	0	0	AG	171	2.1	.0	10.0
M. Hillcre NBAX	9	-750	9	-150	AG	850	1.2	.0	13.5
N. Hillcre NBDX	9	150	9	750	AG	992	1.2	.0	10.0
O. Hillcre SBAX	-9	750	-9	150	AG	1212	1.2	.0	13.5
P. Hillcre SBDX	-9	-150	-9	-750	AG	1239	1.2	.0	10.0
Q. Project EBAX	-750	-5	-150	-5	AG	0	1.2	.0	10.0
R. Project EBDX	150	-5	750	-5	AG	216	1.2	.0	10.0
S. Project WBAX	750	5	150	5	AG	385	1.2	.0	10.0
T. Project WBDX	-150	5	-750	5	AG	0	1.2	.0	10.0

JOB: Aviano
RUN: 2025nP-07 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	17	-12	1.8
2. NW	-17	12	1.8
3. SW	-15	-12	1.8
4. NE	15	12	1.8
5. ES mdblk	150	-12	1.8
6. WN mdblk	-150	12	1.8
7. WS mdblk	-150	-12	1.8
8. EN mdblk	150	12	1.8
9. SE mdblk	17	-150	1.8
10. NW mdblk	-17	150	1.8
11. SW mdblk	-15	-150	1.8
12. NE mdblk	15	150	1.8
13. ES blk	600	-12	1.8
14. WN blk	-600	12	1.8
15. WS blk	-600	-12	1.8
16. EN blk	600	12	1.8
17. SE blk	17	-600	1.8
18. NW blk	-17	600	1.8
19. SW blk	-15	-600	1.8
20. NE blk	15	600	1.8

JOB: Aviano
RUN: 2025nP-08 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	350.	.3	.0	.1	.0	.0	.0	.0	.0	.0
2. NW	170.	.4	.0	.0	.0	.0	.2	.0	.0	.0
3. SW	7.	.5	.0	.0	.0	.3	.0	.0	.0	.0
4. NE	187.	.4	.2	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	276.	.1	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	98.	.2	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	82.	.2	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	264.	.1	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	352.	.4	.2	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	172.	.5	.0	.0	.0	.3	.0	.0	.0	.0
11. SW mdblk	7.	.4	.0	.0	.0	.0	.2	.0	.0	.0
12. NE mdblk	188.	.4	.0	.2	.0	.0	.0	.0	.0	.0
13. ES blk	275.	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	96.	.1	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	84.	.1	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	265.	.0	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	353.	.3	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	173.	.3	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	7.	.4	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	187.	.3	.0	.0	.0	.0	.0	.0	.0	.0

JOB: Aviano
RUN: 2025nP-08 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0

JOB: Aviano
RUN: 2025nP-08 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S Z0= 100. CM ALT= 91. (M)
BRG= WORST CASE VD= .0 CM/S
CLAS= 7 (G) VS= .0 CM/S
MIXH= 1000. M AMB= .0 PPM
SIGTH= 10. DEGREES TEMP= 10.0 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Hillcres NBA	9	-150	9	0	AG	935	1.7	.0	13.5
B. Hillcres NBD	9	0	9	150	AG	961	1.3	.0	10.0
C. Hillcres NBL	5	-150	0	0	AG	88	2.1	.0	10.0
D. Hillcres SBA	-9	150	-9	0	AG	1348	1.8	.0	13.5
E. Hillcres SBD	-9	0	-9	-150	AG	1354	1.3	.0	10.0
F. Hillcres SBL	-5	150	0	0	AG	22	2.1	.0	10.0
G. Prewett EBA	-150	-7	0	-7	AG	91	1.9	.0	10.0
H. Prewett EBD	0	-7	150	-7	AG	149	1.4	.0	10.0
I. Prewett EBL	-150	-5	0	0	AG	120	2.1	.0	10.0
J. Prewett WBA	150	7	0	7	AG	27	1.9	.0	10.0
K. Prewett WBD	0	7	-150	7	AG	281	1.4	.0	10.0
L. Prewett WBL	150	5	0	0	AG	114	2.1	.0	10.0
M. Hillcre NBAX	9	-750	9	-150	AG	1023	1.2	.0	13.5
N. Hillcre NBDX	9	150	9	750	AG	961	1.2	.0	10.0
O. Hillcre SBAX	-9	750	-9	150	AG	1370	1.2	.0	13.5
P. Hillcre SBDX	-9	-150	-9	-750	AG	1354	1.2	.0	10.0
Q. Prewett EBAX	-750	-7	-150	-7	AG	211	1.2	.0	10.0
R. Prewett EBDX	150	-7	750	-7	AG	149	1.2	.0	10.0
S. Prewett WBAX	750	7	150	7	AG	141	1.2	.0	10.0
T. Prewett WBDX	-150	7	-750	7	AG	281	1.2	.0	10.0

JOB: Aviano
RUN: 2025nP-08 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	17	-14	1.8
2. NW	-17	14	1.8
3. SW	-15	-14	1.8
4. NE	15	14	1.8
5. ES mdblk	150	-14	1.8
6. WN mdblk	-150	14	1.8
7. WS mdblk	-150	-14	1.8
8. EN mdblk	150	14	1.8
9. SE mdblk	17	-150	1.8
10. NW mdblk	-17	150	1.8
11. SW mdblk	-15	-150	1.8
12. NE mdblk	15	150	1.8
13. ES blk	600	-14	1.8
14. WN blk	-600	14	1.8
15. WS blk	-600	-14	1.8
16. EN blk	600	14	1.8
17. SE blk	17	-600	1.8
18. NW blk	-17	600	1.8
19. SW blk	-15	-600	1.8
20. NE blk	15	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Aviano
RUN: 2025nP-09 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	188.	.4	.2	.0	.0	.0	.0	.0	.0	.0
2. NW	8.	.5	.0	.0	.0	.3	.0	.0	.0	.0
3. SW	8.	.5	.0	.0	.0	.3	.0	.0	.0	.0
4. NE	187.	.4	.2	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	280.	.1	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	92.	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	88.	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	260.	.1	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	352.	.4	.2	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	172.	.5	.0	.0	.0	.3	.0	.0	.0	.0
11. SW mdblk	7.	.5	.0	.0	.0	.3	.0	.0	.0	.0
12. NE mdblk	187.	.4	.0	.2	.0	.0	.0	.0	.0	.0
13. ES blk	276.	.1	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	90.	.0	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	89.	.0	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	264.	.0	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	353.	.3	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	173.	.4	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	7.	.4	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	187.	.3	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Aviano
RUN: 2025nP-09 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.0	.3	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.0	.0	.3	.0	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.2	.1	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Aviano
RUN: 2025nP-09 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S Z0= 100. CM ALT= 91. (M)
BRG= WORST CASE VD= .0 CM/S
CLAS= 7 (G) VS= .0 CM/S
MIXH= 1000. M AMB= .0 PPM
SIGTH= 10. DEGREES TEMP= 10.0 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Hillcres NBA	5	-150	5	0	AG	1048	1.8	.0	13.5
B. Hillcres NBD	5	0	5	150	AG	1007	1.3	.0	10.0
C. Hillcres NBL	2	-150	0	0	AG	0	1.2	.0	10.0
D. Hillcres SBA	-7	150	-7	0	AG	1377	1.8	.0	10.0
E. Hillcres SBD	-7	0	-7	-150	AG	1456	1.4	.0	10.0
F. Hillcres SBL	-5	150	0	0	AG	103	2.1	.0	10.0
G. Vista Gr EBA	-150	0	0	0	AG	0	1.2	.0	10.0
H. Vista Gr EBD	0	0	150	0	AG	194	1.4	.0	10.0
I. Vista Gr EBL	-150	-2	0	0	AG	0	1.2	.0	10.0
J. Vista Gr WBA	150	5	0	5	AG	50	1.9	.0	10.0
K. Vista Gr WBD	0	5	-150	5	AG	0	1.2	.0	10.0
L. Vista Gr WBL	150	5	0	0	AG	79	2.1	.0	10.0
M. Hillcre NBAX	5	-750	5	-150	AG	1048	1.2	.0	13.5
N. Hillcre NBDX	5	150	5	750	AG	1007	1.2	.0	10.0
O. Hillcre SBAX	-7	750	-7	150	AG	1480	1.2	.0	10.0
P. Hillcre SBDX	-7	-150	-7	-750	AG	1456	1.2	.0	10.0
Q. Vista G EBAX	-750	0	-150	0	AG	0	1.2	.0	10.0
R. Vista G EBDX	150	0	750	0	AG	194	1.2	.0	10.0
S. Vista G WBAX	750	5	150	5	AG	129	1.2	.0	10.0
T. Vista G WBDX	-150	5	-750	5	AG	0	1.2	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Aviano
RUN: 2025nP-09 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	14	-7	1.8
2. NW	-14	12	1.8
3. SW	-14	-7	1.8
4. NE	12	12	1.8
5. ES mdblk	150	-7	1.8
6. WN mdblk	-150	12	1.8
7. WS mdblk	-150	-7	1.8
8. EN mdblk	150	12	1.8
9. SE mdblk	14	-150	1.8
10. NW mdblk	-14	150	1.8
11. SW mdblk	-14	-150	1.8
12. NE mdblk	12	150	1.8
13. ES blk	600	-7	1.8
14. WN blk	-600	12	1.8
15. WS blk	-600	-7	1.8
16. EN blk	600	12	1.8
17. SE blk	14	-600	1.8
18. NW blk	-14	600	1.8
19. SW blk	-14	-600	1.8
20. NE blk	12	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Aviano
RUN: 2025nP-10 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	350.	1.0	.0	.2	.0	.0	.0	.1	.0	.3
2. NW	98.	1.0	.0	.0	.0	.0	.0	.0	.0	.1
3. SW	79.	1.1	.0	.0	.0	.0	.1	.0	.1	.4
4. NE	257.	.9	.0	.1	.0	.0	.0	.0	.1	.0
5. ES mdblk	280.	1.0	.0	.0	.0	.0	.0	.0	.0	.7
6. WN mdblk	98.	.8	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	82.	.9	.0	.0	.0	.0	.0	.0	.5	.0
8. EN mdblk	260.	1.0	.0	.0	.0	.0	.0	.0	.0	.1
9. SE mdblk	353.	.5	.1	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	170.	.6	.0	.0	.0	.2	.0	.1	.0	.0
11. SW mdblk	8.	.6	.0	.0	.0	.0	.3	.0	.0	.0
12. NE mdblk	188.	.6	.0	.2	.0	.0	.0	.0	.0	.0
13. ES blk	277.	.7	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	97.	.5	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	83.	.5	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	263.	.6	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	354.	.4	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	173.	.5	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	7.	.4	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	187.	.4	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Aviano
RUN: 2025nP-10 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	.0	.4	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	.0	.2	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.5	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Aviano
RUN: 2025nP-10 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S ZO= 100. CM ALT= 91. (M)
BRG= WORST CASE VD= .0 CM/S
CLAS= 7 (G) VS= .0 CM/S
MIXH= 1000. M AMB= .0 PPM
SIGTH= 10. DEGREES TEMP= 10.0 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Hillcres NBA	9	-150	9	0	AG	592	1.8	.0	13.5
B. Hillcres NBD	9	0	9	150	AG	1234	1.4	.0	10.0
C. Hillcres NBL	5	-150	0	0	AG	326	2.2	.0	10.0
D. Hillcres SBA	-9	150	-9	0	AG	628	1.8	.0	13.5
E. Hillcres SBD	-9	0	-9	-150	AG	1374	1.4	.0	10.0
F. Hillcres SBL	-5	150	0	0	AG	902	2.2	.0	10.0
G. Lone Tre EBA	-150	-9	0	-9	AG	1694	2.2	.0	13.5
H. Lone Tre EBD	0	-9	150	-9	AG	2682	2.0	.0	10.0
I. Lone Tre EBL	-150	-5	0	0	AG	277	2.2	.0	10.0
J. Lone Tre WBA	150	9	0	9	AG	1997	2.2	.0	13.5
K. Lone Tre WBD	0	9	-150	9	AG	1685	1.8	.0	10.0
L. Lone Tre WBL	150	5	0	0	AG	559	2.2	.0	10.0
M. Hillcre NBAX	9	-750	9	-150	AG	918	1.2	.0	13.5
N. Hillcre NBDX	9	150	9	750	AG	1234	1.2	.0	10.0
O. Hillcre SBAX	-9	750	-9	150	AG	1530	1.2	.0	13.5
P. Hillcre SBDX	-9	-150	-9	-750	AG	1374	1.2	.0	10.0
Q. Lone Tr EBAX	-750	-9	-150	-9	AG	1971	1.2	.0	13.5
R. Lone Tr EBDX	150	-9	750	-9	AG	2682	1.2	.0	10.0
S. Lone Tr WBAX	750	9	150	9	AG	2556	1.2	.0	13.5
T. Lone Tr WBDX	-150	9	-750	9	AG	1685	1.2	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Aviano
RUN: 2025nP-10 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	17	-15	1.8
2. NW	-17	15	1.8
3. SW	-15	-17	1.8
4. NE	15	17	1.8
5. ES mdblk	150	-15	1.8
6. WN mdblk	-150	15	1.8
7. WS mdblk	-150	-17	1.8
8. EN mdblk	150	17	1.8
9. SE mdblk	17	-150	1.8
10. NW mdblk	-17	150	1.8
11. SW mdblk	-15	-150	1.8
12. NE mdblk	15	150	1.8
13. ES blk	600	-15	1.8
14. WN blk	-600	15	1.8
15. WS blk	-600	-17	1.8
16. EN blk	600	17	1.8
17. SE blk	17	-600	1.8
18. NW blk	-17	600	1.8
19. SW blk	-15	-600	1.8
20. NE blk	15	600	1.8

JOB: Aviano
RUN: 2025nP-11 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	270.	.9	.0	.0	.0	.0	.0	.0	.5	.1
2. NW	98.	.9	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	77.	.8	.0	.0	.0	.0	.0	.0	.1	.3
4. NE	100.	.8	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	279.	.8	.0	.0	.0	.0	.0	.0	.0	.5
6. WN mdblk	99.	.8	.0	.0	.0	.0	.0	.0	.1	.0
7. WS mdblk	81.	.9	.0	.0	.0	.0	.0	.0	.6	.0
8. EN mdblk	261.	.9	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	352.	.2	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	173.	.2	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	7.	.2	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	186.	.2	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	277.	.6	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	97.	.6	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	83.	.6	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	263.	.6	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	354.	.2	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	175.	.1	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	6.	.2	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	185.	.1	.0	.0	.0	.0	.0	.0	.0	.0

JOB: Aviano
RUN: 2025nP-11 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	.0	.5	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	.0	.6	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.5	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.6	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.4	.1	.0	
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.4
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.4	.0	.0	.1
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.4	.0
17. SE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

JOB: Aviano
RUN: 2025nP-11 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S Z0= 100. CM ALT= 91. (M)
BRG= WORST CASE VD= .0 CM/S
CLAS= 7 (G) VS= .0 CM/S
MIXH= 1000. M AMB= .0 PPM
SIGTH= 10. DEGREES TEMP= 10.0 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Vista Gr NBA	7	-150	7	0	AG	192	1.9	.0	10.0
B. Vista Gr NBD	7	0	7	150	AG	189	1.4	.0	10.0
C. Vista Gr NBL	5	-150	0	0	AG	90	2.1	.0	10.0
D. Vista Gr SBA	-7	150	-7	0	AG	139	1.9	.0	10.0
E. Vista Gr SBD	-7	0	-7	-150	AG	243	1.4	.0	10.0
F. Vista Gr SBL	-5	150	0	0	AG	82	2.1	.0	10.0
G. Lone Tre EBA	-150	-9	0	-9	AG	2328	2.1	.0	13.5
H. Lone Tre EBD	0	-9	150	-9	AG	2462	1.6	.0	10.0
I. Lone Tre EBL	-150	-5	0	0	AG	75	2.1	.0	10.0
J. Lone Tre WBA	150	9	0	9	AG	2319	2.1	.0	13.5
K. Lone Tre WBD	0	9	-150	9	AG	2459	1.6	.0	10.0
L. Lone Tre WBL	150	5	0	0	AG	130	2.1	.0	10.0
M. Vista G NBAX	7	-750	7	-150	AG	282	1.2	.0	10.0
N. Vista G NBDX	7	150	7	750	AG	189	1.2	.0	10.0
O. Vista G SBAX	-7	750	-7	150	AG	221	1.2	.0	10.0
P. Vista G SBDX	-7	-150	-7	-750	AG	245	1.2	.0	10.0
Q. Lone Tr EBAX	-750	-9	-150	-9	AG	2403	1.2	.0	13.5
R. Lone Tr EBDX	150	-9	750	-9	AG	2462	1.2	.0	10.0
S. Lone Tr WBAX	750	9	150	9	AG	2449	1.2	.0	13.5
T. Lone Tr WBDX	-150	9	-750	9	AG	2459	1.2	.0	10.0

JOB: Aviano
RUN: 2025nP-11 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	14	-15	1.8
2. NW	-14	15	1.8
3. SW	-14	-17	1.8
4. NE	14	17	1.8
5. ES mdblk	150	-15	1.8
6. WN mdblk	-150	15	1.8
7. WS mdblk	-150	-17	1.8
8. EN mdblk	150	17	1.8
9. SE mdblk	14	-150	1.8
10. NW mdblk	-14	150	1.8
11. SW mdblk	-14	-150	1.8
12. NE mdblk	14	150	1.8
13. ES blk	600	-15	1.8
14. WN blk	-600	15	1.8
15. WS blk	-600	-17	1.8
16. EN blk	600	17	1.8
17. SE blk	14	-600	1.8
18. NW blk	-14	600	1.8
19. SW blk	-14	-600	1.8
20. NE blk	14	600	1.8

JOB: Aviano
RUN: 2025nP-12 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	278.	1.0	.0	.0	.0	.0	.0	.0	.5	.2
2. NW	98.	1.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	77.	1.0	.0	.0	.0	.0	.0	.0	.2	.4
4. NE	100.	1.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	279.	.9	.0	.0	.0	.0	.0	.0	.0	.6
6. WN mdblk	99.	1.0	.0	.0	.0	.0	.0	.0	.1	.0
7. WS mdblk	82.	1.0	.0	.0	.0	.0	.0	.0	.7	.0
8. EN mdblk	260.	1.1	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	347.	.3	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	175.	.2	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	12.	.3	.0	.0	.0	.1	.0	.0	.0	.0
12. NE mdblk	185.	.2	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	277.	.7	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	98.	.7	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	83.	.6	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	262.	.7	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	354.	.2	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	177.	.1	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	7.	.2	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	183.	.1	.0	.0	.0	.0	.0	.0	.0	.0

JOB: Aviano
RUN: 2025nP-12 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	.0	.6	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	.0	.7	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.6	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.7	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.5	.2	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.5
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.4	.0	.0	.1
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	.0	.0	.0	.0	.1	.0	.0	.0	.0	.1	.5	.0
18. NW blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

JOB: Aviano
RUN: 2025nP-12 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S ZO= 100. CM ALT= 91. (M)
BRG= WORST CASE VD= .0 CM/S
CLAS= 7 (G) VS= .0 CM/S
MIXH= 1000. M AMB= .0 PPM
SIGTH= 10. DEGREES TEMP= 10.0 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Heidorn NBA	11	-150	11	0	AG	264	2.0	.0	10.0
B. Heidorn NBD	11	0	11	150	AG	67	1.4	.0	10.0
C. Heidorn NBL	9	-150	0	0	AG	250	2.1	.0	10.0
D. Heidorn SBA	-7	150	-7	0	AG	32	1.9	.0	10.0
E. Heidorn SBD	-7	0	-7	-150	AG	565	1.4	.0	10.0
F. Heidorn SBL	-5	150	0	0	AG	38	2.1	.0	10.0
G. Lone Tre EBA	-150	-9	0	-9	AG	2783	2.1	.0	13.5
H. Lone Tre EBD	0	-9	150	-9	AG	2938	1.6	.0	10.0
I. Lone Tre EBL	-150	-5	0	0	AG	7	2.1	.0	10.0
J. Lone Tre WBA	150	9	0	9	AG	2869	2.1	.0	13.5
K. Lone Tre WBD	0	9	-150	9	AG	3093	1.6	.0	10.0
L. Lone Tre WBL	150	5	0	0	AG	420	2.2	.0	10.0
M. Heidorn NBAX	11	-750	11	-150	AG	514	1.2	.0	10.0
N. Heidorn NBDX	11	150	11	750	AG	67	1.2	.0	10.0
O. Heidorn SBAX	-7	750	-7	150	AG	70	1.2	.0	10.0
P. Heidorn SBDX	-7	-150	-7	-750	AG	565	1.2	.0	10.0
Q. Lone Tr EBAX	-750	-9	-150	-9	AG	2790	1.2	.0	13.5
R. Lone Tr EBDX	150	-9	750	-9	AG	2938	1.2	.0	10.0
S. Lone Tr WBAX	750	9	150	9	AG	3289	1.2	.0	13.5
T. Lone Tr WBDX	-150	9	-750	9	AG	3093	1.2	.0	10.0

JOB: Aviano
RUN: 2025nP-12 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	17	-15	1.8
2. NW	-14	15	1.8
3. SW	-14	-17	1.8
4. NE	17	17	1.8
5. ES mdblk	150	-15	1.8
6. WN mdblk	-150	15	1.8
7. WS mdblk	-150	-17	1.8
8. EN mdblk	150	17	1.8
9. SE mdblk	17	-150	1.8
10. NW mdblk	-14	150	1.8
11. SW mdblk	-14	-150	1.8
12. NE mdblk	17	150	1.8
13. ES blk	600	-15	1.8
14. WN blk	-600	15	1.8
15. WS blk	-600	-17	1.8
16. EN blk	600	17	1.8
17. SE blk	17	-600	1.8
18. NW blk	-14	600	1.8
19. SW blk	-14	-600	1.8
20. NE blk	17	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Aviano
RUN: 2025nP-13 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	279.	1.1	.0	.0	.0	.0	.0	.0	.5	.2
2. NW	98.	1.2	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	76.	1.0	.0	.0	.0	.0	.1	.0	.1	.5
4. NE	256.	1.1	.0	.0	.0	.0	.0	.0	.2	.0
5. ES mdblk	280.	1.0	.0	.0	.0	.0	.0	.0	.0	.7
6. WN mdblk	99.	1.0	.0	.0	.0	.0	.0	.0	.0	.1
7. WS mdblk	81.	1.0	.0	.0	.0	.0	.0	.0	.6	.0
8. EN mdblk	260.	1.2	.0	.0	.0	.0	.0	.0	.1	.0
9. SE mdblk	352.	.4	.2	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	171.	.5	.0	.0	.0	.0	.0	.1	.0	.0
11. SW mdblk	8.	.5	.0	.0	.0	.0	.2	.0	.0	.0
12. NE mdblk	187.	.5	.0	.2	.0	.0	.0	.0	.0	.0
13. ES blk	278.	.8	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	98.	.8	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	82.	.7	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	262.	.8	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	354.	.3	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	174.	.3	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	6.	.3	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	186.	.3	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Aviano
RUN: 2025nP-13 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	.0	.7	.1	.0	.0	.0	.0	.0	.0	.1	.0	.0
3. SW	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	.0	.3	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.6	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.8	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.5
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.4	.0	.0	.1
16. EN blk	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0
17. SE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.6	.0
18. NW blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Aviano
RUN: 2025nP-13 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S ZO= 100. CM ALT= 91. (M)
BRG= WORST CASE VD= .0 CM/S
CLAS= 7 (G) VS= .0 CM/S
MIXH= 1000. M AMB= .0 PPM
SIGTH= 10. DEGREES TEMP= 10.0 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Canada V NBA	12	-150	12	0	AG	566	2.0	.0	13.5
B. Canada V NBD	12	0	12	150	AG	713	1.5	.0	10.0
C. Canada V NBL	9	-150	0	0	AG	189	2.1	.0	10.0
D. Canada V SBA	-7	150	-7	0	AG	183	1.9	.0	10.0
E. Canada V SBD	-7	0	-7	-150	AG	753	2.2	.0	10.0
F. Canada V SBL	-5	150	0	0	AG	598	2.2	.0	10.0
G. Lone Tre EBA	-150	-14	0	-14	AG	2842	2.1	.0	17.0
H. Lone Tre EBD	0	-14	150	-14	AG	3813	1.6	.0	13.5
I. Lone Tre EBL	-150	-9	0	0	AG	189	2.1	.0	10.0
J. Lone Tre WBA	150	12	0	12	AG	3392	2.1	.0	13.5
K. Lone Tre WBD	0	12	-150	12	AG	3255	1.6	.0	10.0
L. Lone Tre WBL	150	9	0	0	AG	575	2.2	.0	10.0
M. Canada NBAX	12	-750	12	-150	AG	755	1.2	.0	13.5
N. Canada NBDX	12	150	12	750	AG	713	1.2	.0	10.0
O. Canada SBAX	-7	750	-7	150	AG	781	1.2	.0	10.0
P. Canada SBDX	-7	-150	-7	-750	AG	753	1.2	.0	10.0
Q. Lone Tr EBAX	-750	-14	-150	-14	AG	3031	1.2	.0	17.0
R. Lone Tr EBDX	150	-14	750	-14	AG	3813	1.2	.0	13.5
S. Lone Tr WBAX	750	12	150	12	AG	3967	1.2	.0	13.5
T. Lone Tr WBDX	-150	12	-750	12	AG	3255	1.2	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Aviano
RUN: 2025nP-13 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	21	-22	1.8
2. NW	-14	19	1.8
3. SW	-14	-24	1.8
4. NE	19	21	1.8
5. ES mdblk	150	-22	1.8
6. WN mdblk	-150	19	1.8
7. WS mdblk	-150	-24	1.8
8. EN mdblk	150	21	1.8
9. SE mdblk	21	-150	1.8
10. NW mdblk	-14	150	1.8
11. SW mdblk	-14	-150	1.8
12. NE mdblk	19	150	1.8
13. ES blk	600	-22	1.8
14. WN blk	-600	19	1.8
15. WS blk	-600	-24	1.8
16. EN blk	600	21	1.8
17. SE blk	21	-600	1.8
18. NW blk	-14	600	1.8
19. SW blk	-14	-600	1.8
20. NE blk	19	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Aviano
RUN: 2025nP-14 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	277.	1.5	.0	.0	.0	.0	.2	.0	.9	.0
2. NW	99.	1.4	.0	.0	.0	.0	.0	.0	.0	.2
3. SW	77.	1.4	.0	.0	.0	.0	.2	.0	.2	.4
4. NE	100.	1.4	.0	.0	.0	.0	.0	.0	.0	.2
5. ES mdblk	279.	1.2	.0	.0	.0	.0	.0	.0	.0	.6
6. WN mdblk	99.	1.3	.0	.0	.0	.0	.0	.0	.3	.0
7. WS mdblk	82.	1.3	.0	.0	.0	.0	.0	.0	.9	.0
8. EN mdblk	261.	1.6	.0	.0	.0	.0	.0	.0	.1	.2
9. SE mdblk	349.	.4	.0	.0	.0	.0	.2	.0	.0	.0
10. NW mdblk	174.	.4	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	8.	.7	.0	.0	.0	.0	.5	.0	.0	.0
12. NE mdblk	186.	.4	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	277.	.9	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	97.	1.0	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	82.	.9	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	263.	1.0	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	353.	.3	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	175.	.2	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	6.	.4	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	185.	.2	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Aviano
RUN: 2025nP-14 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.1
2. NW	.0	.8	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	.0	.3	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.8	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.1	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	1.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.6
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.5	.0	.0	.2
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.7	.0
18. NW blk	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.0	.0	.0	.3	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Aviano
RUN: 2025nP-14 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S Z0= 100. CM ALT= 91. (M)
BRG= WORST CASE VD= .0 CM/S
CLAS= 7 (G) VS= .0 CM/S
MIXH= 1000. M AMB= .0 PPM
SIGTH= 10. DEGREES TEMP= 10.0 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. SR-4 Byp NBA	0	-150	0	0	AG	0	1.2	.0	10.0
B. SR-4 Byp NBD	0	0	0	150	AG	0	1.2	.0	10.0
C. SR-4 Byp NBL	2	-150	0	0	AG	0	1.2	.0	10.0
D. SR-4 Byp SBA	-7	150	-7	0	AG	222	2.0	.0	10.0
E. SR-4 Byp SBD	-7	0	-7	-150	AG	1601	2.2	.0	10.0
F. SR-4 Byp SBL	-5	150	0	0	AG	421	2.2	.0	10.0
G. Lone Tre EBA	-150	-5	0	-5	AG	3775	2.1	.0	13.5
H. Lone Tre EBD	0	-5	150	-5	AG	3176	1.6	.0	10.0
I. Lone Tre EBL	-150	-2	0	0	AG	0	1.2	.0	10.0
J. Lone Tre WBA	150	7	0	7	AG	3931	2.1	.0	10.0
K. Lone Tre WBD	0	7	-150	7	AG	4153	1.6	.0	10.0
L. Lone Tre WBL	150	5	0	0	AG	581	2.2	.0	10.0
M. SR-4 By NBAX	0	-750	0	-150	AG	0	1.2	.0	10.0
N. SR-4 By NBDX	0	150	0	750	AG	0	1.2	.0	10.0
O. SR-4 By SBAX	-7	750	-7	150	AG	643	1.2	.0	10.0
P. SR-4 By SBDX	-7	-150	-7	-750	AG	1601	1.2	.0	10.0
Q. Lone Tr EBAX	-750	-5	-150	-5	AG	3775	1.2	.0	13.5
R. Lone Tr EBDX	150	-5	750	-5	AG	3176	1.2	.0	10.0
S. Lone Tr WBAX	750	7	150	7	AG	4512	1.2	.0	10.0
T. Lone Tr WBDX	-150	7	-750	7	AG	4153	1.2	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Aviano
RUN: 2025nP-14 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	7	-12	1.8
2. NW	-14	14	1.8
3. SW	-14	-14	1.8
4. NE	7	14	1.8
5. ES mdblk	150	-12	1.8
6. WN mdblk	-150	14	1.8
7. WS mdblk	-150	-14	1.8
8. EN mdblk	150	14	1.8
9. SE mdblk	7	-150	1.8
10. NW mdblk	-14	150	1.8
11. SW mdblk	-14	-150	1.8
12. NE mdblk	7	150	1.8
13. ES blk	600	-12	1.8
14. WN blk	-600	14	1.8
15. WS blk	-600	-14	1.8
16. EN blk	600	14	1.8
17. SE blk	7	-600	1.8
18. NW blk	-14	600	1.8
19. SW blk	-14	-600	1.8
20. NE blk	7	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Aviano
RUN: 2025nP-15 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	279.	.5	.0	.0	.0	.0	.0	.0	.2	.0
2. NW	99.	.4	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	81.	.5	.0	.0	.0	.0	.0	.0	.0	.3
4. NE	261.	.4	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	278.	.5	.0	.0	.0	.0	.0	.0	.0	.3
6. WN mdblk	98.	.5	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	82.	.5	.0	.0	.0	.0	.0	.0	.3	.0
8. EN mdblk	262.	.5	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	351.	.2	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	176.	.2	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	9.	.2	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	183.	.1	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	276.	.3	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	96.	.3	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	84.	.3	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	264.	.3	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	354.	.2	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	175.	.0	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	6.	.2	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	183.	.0	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Aviano
RUN: 2025nP-15 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Aviano
RUN: 2025nP-15 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S Z0= 100. CM ALT= 91. (M)
BRG= WORST CASE VD= .0 CM/S
CLAS= 7 (G) VS= .0 CM/S
MIXH= 1000. M AMB= .0 PPM
SIGTH= 10. DEGREES TEMP= 10.0 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. High Sch NBA	4	-150	4	0	AG	210	1.6	.0	10.0
B. High Sch NBD	4	0	4	150	AG	102	1.3	.0	10.0
C. High Sch NBL	2	-150	0	0	AG	88	2.1	.0	10.0
D. High Sch SBA	-4	150	-4	0	AG	81	1.6	.0	10.0
E. High Sch SBD	-4	0	-4	-150	AG	382	1.3	.0	10.0
F. High Sch SBL	-2	150	0	0	AG	20	2.1	.0	10.0
G. Sand Cre EBA	-150	-7	0	-7	AG	906	2.2	.0	10.0
H. Sand Cre EBD	0	-7	150	-7	AG	1015	2.2	.0	10.0
I. Sand Cre EBL	-150	-5	0	0	AG	66	2.1	.0	10.0
J. Sand Cre WBA	150	7	0	7	AG	716	2.2	.0	10.0
K. Sand Cre WBD	0	7	-150	7	AG	847	2.2	.0	10.0
L. Sand Cre WBL	150	5	0	0	AG	259	2.2	.0	10.0
M. High Sc NBAX	4	-750	4	-150	AG	298	1.2	.0	10.0
N. High Sc NBDX	4	150	4	750	AG	102	1.2	.0	10.0
O. High Sc SBAX	-4	750	-4	150	AG	101	1.2	.0	10.0
P. High Sc SBDX	-4	-150	-4	-750	AG	382	1.2	.0	10.0
Q. Sand Cr EBAX	-750	-7	-150	-7	AG	972	1.2	.0	10.0
R. Sand Cr EBDX	150	-7	750	-7	AG	1015	1.2	.0	10.0
S. Sand Cr WBAX	750	7	150	7	AG	975	1.2	.0	10.0
T. Sand Cr WBDX	-150	7	-750	7	AG	847	1.2	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Aviano
RUN: 2025nP-15 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	10	-14	1.8
2. NW	-10	14	1.8
3. SW	-10	-14	1.8
4. NE	10	14	1.8
5. ES mdblk	150	-14	1.8
6. WN mdblk	-150	14	1.8
7. WS mdblk	-150	-14	1.8
8. EN mdblk	150	14	1.8
9. SE mdblk	10	-150	1.8
10. NW mdblk	-10	150	1.8
11. SW mdblk	-10	-150	1.8
12. NE mdblk	10	150	1.8
13. ES blk	600	-14	1.8
14. WN blk	-600	14	1.8
15. WS blk	-600	-14	1.8
16. EN blk	600	14	1.8
17. SE blk	10	-600	1.8
18. NW blk	-10	600	1.8
19. SW blk	-10	-600	1.8
20. NE blk	10	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Aviano
RUN: 2025PP-01 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	278.	.8	.0	.0	.0	.0	.0	.0	.3	.1
2. NW	98.	.7	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	79.	.7	.0	.0	.0	.0	.0	.0	.1	.3
4. NE	259.	.7	.0	.0	.0	.0	.0	.0	.1	.0
5. ES mdblk	278.	.7	.0	.0	.0	.0	.0	.0	.0	.4
6. WN mdblk	98.	.7	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	82.	.7	.0	.0	.0	.0	.0	.0	.4	.0
8. EN mdblk	261.	.7	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	351.	.4	.1	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	172.	.3	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	8.	.4	.0	.0	.0	.2	.0	.0	.0	.0
12. NE mdblk	188.	.4	.0	.1	.0	.0	.0	.0	.0	.0
13. ES blk	277.	.5	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	97.	.5	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	83.	.5	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	263.	.5	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	354.	.3	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	174.	.3	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	7.	.3	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	186.	.3	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Aviano
RUN: 2025PP-01 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	.0	.1	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.3
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.3	.0	.0	.0
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.3	.0	.0
17. SE blk	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Aviano
RUN: 2025PP-01 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S Z0= 100. CM ALT= 91. (M)
BRG= WORST CASE VD= .0 CM/S
CLAS= 7 (G) VS= .0 CM/S
MIXH= 1000. M AMB= .0 PPM
SIGTH= 10. DEGREES TEMP= 10.0 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Deer Val NBA	12	-150	12	0	AG	514	1.8	.0	13.5
B. Deer Val NBD	12	0	12	150	AG	793	1.3	.0	10.0
C. Deer Val NBL	9	-150	0	0	AG	373	2.1	.0	10.0
D. Deer Val SBA	-9	150	-9	0	AG	379	1.7	.0	13.5
E. Deer Val SBD	-9	0	-9	-150	AG	851	1.3	.0	10.0
F. Deer Val SBL	-5	150	0	0	AG	320	2.2	.0	10.0
G. Lone Tre EBA	-150	-9	0	-9	AG	1636	2.2	.0	13.5
H. Lone Tre EBD	0	-9	150	-9	AG	1795	1.8	.0	10.0
I. Lone Tre EBL	-150	-5	0	0	AG	124	2.1	.0	10.0
J. Lone Tre WBA	150	9	0	9	AG	1514	2.1	.0	13.5
K. Lone Tre WBD	0	9	-150	9	AG	1606	1.8	.0	10.0
L. Lone Tre WBL	150	5	0	0	AG	185	2.1	.0	10.0
M. Deer Va NBAX	12	-750	12	-150	AG	887	1.2	.0	13.5
N. Deer Va NBDX	12	150	12	750	AG	793	1.2	.0	10.0
O. Deer Va SBAX	-9	750	-9	150	AG	699	1.2	.0	13.5
P. Deer Va SBDX	-9	-150	-9	-750	AG	851	1.2	.0	10.0
Q. Lone Tr EBAX	-750	-9	-150	-9	AG	1760	1.2	.0	13.5
R. Lone Tr EBDX	150	-9	750	-9	AG	1795	1.2	.0	10.0
S. Lone Tr WBAX	750	9	150	9	AG	1699	1.2	.0	13.5
T. Lone Tr WBDX	-150	9	-750	9	AG	1606	1.2	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Aviano
RUN: 2025PP-01 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	21	-15	1.8
2. NW	-17	15	1.8
3. SW	-15	-17	1.8
4. NE	19	17	1.8
5. ES mdblk	150	-15	1.8
6. WN mdblk	-150	15	1.8
7. WS mdblk	-150	-17	1.8
8. EN mdblk	150	17	1.8
9. SE mdblk	21	-150	1.8
10. NW mdblk	-17	150	1.8
11. SW mdblk	-15	-150	1.8
12. NE mdblk	19	150	1.8
13. ES blk	600	-15	1.8
14. WN blk	-600	15	1.8
15. WS blk	-600	-17	1.8
16. EN blk	600	17	1.8
17. SE blk	21	-600	1.8
18. NW blk	-17	600	1.8
19. SW blk	-15	-600	1.8
20. NE blk	19	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Aviano
RUN: 2025PP-02 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	351.	.3	.0	.1	.0	.0	.0	.0	.0	.0
2. NW	8.	.3	.0	.0	.0	.2	.0	.0	.0	.0
3. SW	7.	.3	.0	.0	.0	.2	.0	.0	.0	.0
4. NE	187.	.3	.2	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	281.	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	93.	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	84.	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	262.	.1	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	352.	.3	.2	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	172.	.3	.0	.0	.0	.2	.0	.0	.0	.0
11. SW mdblk	7.	.3	.0	.0	.0	.2	.0	.0	.0	.0
12. NE mdblk	188.	.3	.0	.2	.0	.0	.0	.0	.0	.0
13. ES blk	276.	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	93.	.0	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	86.	.0	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	265.	.0	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	354.	.2	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	173.	.2	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	7.	.3	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	187.	.3	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Aviano
RUN: 2025PP-02 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Aviano
RUN: 2025PP-02 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S Z0= 100. CM ALT= 91. (M)
BRG= WORST CASE VD= .0 CM/S
CLAS= 7 (G) VS= .0 CM/S
MIXH= 1000. M AMB= .0 PPM
SIGTH= 10. DEGREES TEMP= 10.0 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Deer Val NBA	9	-150	9	0	AG	801	1.7	.0	13.5
B. Deer Val NBD	9	0	9	150	AG	937	1.3	.0	10.0
C. Deer Val NBL	5	-150	0	0	AG	15	2.1	.0	10.0
D. Deer Val SBA	-9	150	-9	0	AG	820	1.7	.0	13.5
E. Deer Val SBD	-9	0	-9	-150	AG	849	1.3	.0	10.0
F. Deer Val SBL	-5	150	0	0	AG	32	2.1	.0	10.0
G. Marita D EBA	-150	-7	0	-7	AG	8	1.9	.0	10.0
H. Marita D EBD	0	-7	150	-7	AG	37	1.4	.0	10.0
I. Marita D EBL	-150	-5	0	0	AG	15	2.1	.0	10.0
J. Marita D WBA	150	7	0	7	AG	130	1.9	.0	10.0
K. Marita D WBD	0	7	-150	7	AG	40	1.4	.0	10.0
L. Marita D WBL	150	5	0	0	AG	42	2.1	.0	10.0
M. Deer Va NBAX	9	-750	9	-150	AG	816	1.2	.0	13.5
N. Deer Va NBDX	9	150	9	750	AG	937	1.2	.0	10.0
O. Deer Va SBAX	-9	750	-9	150	AG	852	1.2	.0	13.5
P. Deer Va SBDX	-9	-150	-9	-750	AG	849	1.2	.0	10.0
Q. Marita EBAX	-750	-7	-150	-7	AG	23	1.2	.0	10.0
R. Marita EBDX	150	-7	750	-7	AG	37	1.2	.0	10.0
S. Marita WBAX	750	7	150	7	AG	172	1.2	.0	10.0
T. Marita WBDX	-150	7	-750	7	AG	40	1.2	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Aviano
RUN: 2025PP-02 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	17	-14	1.8
2. NW	-17	14	1.8
3. SW	-15	-14	1.8
4. NE	15	14	1.8
5. ES mdblk	150	-14	1.8
6. WN mdblk	-150	14	1.8
7. WS mdblk	-150	-14	1.8
8. EN mdblk	150	14	1.8
9. SE mdblk	17	-150	1.8
10. NW mdblk	-17	150	1.8
11. SW mdblk	-15	-150	1.8
12. NE mdblk	15	150	1.8
13. ES blk	600	-14	1.8
14. WN blk	-600	14	1.8
15. WS blk	-600	-14	1.8
16. EN blk	600	14	1.8
17. SE blk	17	-600	1.8
18. NW blk	-17	600	1.8
19. SW blk	-15	-600	1.8
20. NE blk	15	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Aviano
RUN: 2025PP-03 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	188.	.4	.2	.0	.0	.0	.0	.0	.0	.0
2. NW	170.	.4	.0	.0	.0	.0	.1	.0	.0	.0
3. SW	7.	.4	.0	.0	.0	.2	.0	.0	.0	.0
4. NE	187.	.4	.2	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	276.	.2	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	98.	.2	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	83.	.2	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	263.	.2	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	351.	.4	.2	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	172.	.4	.0	.0	.0	.2	.0	.0	.0	.0
11. SW mdblk	8.	.4	.0	.0	.0	.0	.2	.0	.0	.0
12. NE mdblk	187.	.3	.0	.1	.0	.0	.0	.0	.0	.0
13. ES blk	276.	.2	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	96.	.2	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	84.	.1	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	264.	.1	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	353.	.3	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	174.	.3	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	7.	.3	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	187.	.3	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Aviano
RUN: 2025PP-03 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Aviano
RUN: 2025PP-03 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S Z0= 100. CM ALT= 91. (M)
BRG= WORST CASE VD= .0 CM/S
CLAS= 7 (G) VS= .0 CM/S
MIXH= 1000. M AMB= .0 PPM
SIGTH= 10. DEGREES TEMP= 10.0 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Deer Val NBA	9	-150	9	0	AG	899	1.8	.0	13.5
B. Deer Val NBD	9	0	9	150	AG	792	1.3	.0	10.0
C. Deer Val NBL	5	-150	0	0	AG	275	2.2	.0	10.0
D. Deer Val SBA	-9	150	-9	0	AG	842	1.8	.0	13.5
E. Deer Val SBD	-9	0	-9	-150	AG	993	1.3	.0	10.0
F. Deer Val SBL	-5	150	0	0	AG	146	2.1	.0	10.0
G. Crocker EBA	-150	-7	0	-7	AG	250	1.7	.0	10.0
H. Crocker EBD	0	-7	150	-7	AG	399	1.3	.0	10.0
I. Crocker EBL	-150	-5	0	0	AG	26	2.1	.0	10.0
J. Crocker WBA	150	7	0	7	AG	135	1.7	.0	10.0
K. Crocker WBD	0	7	-150	7	AG	467	1.3	.0	10.0
L. Crocker WBL	150	5	0	0	AG	78	2.1	.0	10.0
M. Deer Va NBAX	9	-750	9	-150	AG	1174	1.2	.0	13.5
N. Deer Va NBDX	9	150	9	750	AG	792	1.2	.0	10.0
O. Deer Va SBAX	-9	750	-9	150	AG	988	1.2	.0	13.5
P. Deer Va SBDX	-9	-150	-9	-750	AG	993	1.2	.0	10.0
Q. Crocker EBAX	-750	-7	-150	-7	AG	276	1.2	.0	10.0
R. Crocker EBDX	150	-7	750	-7	AG	399	1.2	.0	10.0
S. Crocker WBAX	750	7	150	7	AG	213	1.2	.0	10.0
T. Crocker WBDX	-150	7	-750	7	AG	467	1.2	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Aviano
RUN: 2025PP-03 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	17	-14	1.8
2. NW	-17	14	1.8
3. SW	-15	-14	1.8
4. NE	15	14	1.8
5. ES mdblk	150	-14	1.8
6. WN mdblk	-150	14	1.8
7. WS mdblk	-150	-14	1.8
8. EN mdblk	150	14	1.8
9. SE mdblk	17	-150	1.8
10. NW mdblk	-17	150	1.8
11. SW mdblk	-15	-150	1.8
12. NE mdblk	15	150	1.8
13. ES blk	600	-14	1.8
14. WN blk	-600	14	1.8
15. WS blk	-600	-14	1.8
16. EN blk	600	14	1.8
17. SE blk	17	-600	1.8
18. NW blk	-17	600	1.8
19. SW blk	-15	-600	1.8
20. NE blk	15	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Aviano
RUN: 2025PP-04 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	189.	.4	.3	.0	.0	.0	.0	.0	.0	.0
2. NW	171.	.5	.0	.0	.0	.0	.2	.0	.0	.0
3. SW	8.	.5	.0	.0	.0	.2	.0	.0	.0	.0
4. NE	187.	.5	.2	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	275.	.1	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	100.	.2	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	82.	.2	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	264.	.2	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	351.	.5	.3	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	173.	.5	.0	.0	.0	.3	.0	.0	.0	.0
11. SW mdblk	8.	.5	.0	.0	.0	.0	.3	.0	.0	.0
12. NE mdblk	188.	.4	.0	.2	.0	.0	.0	.0	.0	.0
13. ES blk	273.	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	96.	.1	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	84.	.1	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	265.	.0	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	353.	.4	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	173.	.3	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	7.	.4	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	187.	.3	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Aviano
RUN: 2025PP-04 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Aviano
RUN: 2025PP-04 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S Z0= 100. CM ALT= 91. (M)
BRG= WORST CASE VD= .0 CM/S
CLAS= 7 (G) VS= .0 CM/S
MIXH= 1000. M AMB= .0 PPM
SIGTH= 10. DEGREES TEMP= 10.0 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Deer Val NBA	9	-150	9	0	AG	1139	1.8	.0	13.5
B. Deer Val NBD	9	0	9	150	AG	1212	1.3	.0	10.0
C. Deer Val NBL	5	-150	0	0	AG	239	2.2	.0	10.0
D. Deer Val SBA	-11	150	-11	0	AG	941	2.1	.0	10.0
E. Deer Val SBD	-11	0	-11	-150	AG	1225	1.6	.0	10.0
F. Deer Val SBL	-9	150	0	0	AG	45	2.1	.0	10.0
G. Mammoth EBA	-150	-7	0	-7	AG	257	2.0	.0	10.0
H. Mammoth EBD	0	-7	150	-7	AG	79	1.4	.0	10.0
I. Mammoth EBL	-150	-5	0	0	AG	30	2.1	.0	10.0
J. Mammoth WBA	150	7	0	7	AG	80	1.9	.0	10.0
K. Mammoth WBD	0	7	-150	7	AG	271	1.4	.0	10.0
L. Mammoth WBL	150	5	0	0	AG	56	2.1	.0	10.0
M. Deer Va NBAX	9	-750	9	-150	AG	1378	1.2	.0	13.5
N. Deer Va NBDX	9	150	9	750	AG	1212	1.2	.0	10.0
O. Deer Va SBAX	-11	750	-11	150	AG	986	1.2	.0	10.0
P. Deer Va SBDX	-11	-150	-11	-750	AG	1225	1.2	.0	10.0
Q. Mammoth EBAX	-750	-7	-150	-7	AG	287	1.2	.0	10.0
R. Mammoth EBDX	150	-7	750	-7	AG	79	1.2	.0	10.0
S. Mammoth WBAX	750	7	150	7	AG	136	1.2	.0	10.0
T. Mammoth WBDX	-150	7	-750	7	AG	271	1.2	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Aviano
RUN: 2025PP-04 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	17	-14	1.8
2. NW	-17	14	1.8
3. SW	-17	-14	1.8
4. NE	15	14	1.8
5. ES mdblk	150	-14	1.8
6. WN mdblk	-150	14	1.8
7. WS mdblk	-150	-14	1.8
8. EN mdblk	150	14	1.8
9. SE mdblk	17	-150	1.8
10. NW mdblk	-17	150	1.8
11. SW mdblk	-17	-150	1.8
12. NE mdblk	15	150	1.8
13. ES blk	600	-14	1.8
14. WN blk	-600	14	1.8
15. WS blk	-600	-14	1.8
16. EN blk	600	14	1.8
17. SE blk	17	-600	1.8
18. NW blk	-17	600	1.8
19. SW blk	-17	-600	1.8
20. NE blk	15	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Aviano
RUN: 2025PP-05 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	278.	.4	.0	.0	.0	.0	.0	.0	.3	.0
2. NW	98.	.4	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	278.	.4	.0	.0	.0	.0	.0	.0	.3	.0
4. NE	98.	.4	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	277.	.4	.0	.0	.0	.0	.0	.0	.0	.2
6. WN mdblk	97.	.4	.0	.0	.0	.0	.0	.0	.1	.0
7. WS mdblk	83.	.5	.0	.0	.0	.0	.0	.0	.3	.0
8. EN mdblk	263.	.5	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	358.	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	170.	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	2.	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	189.	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	276.	.3	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	96.	.3	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	84.	.3	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	264.	.3	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	359.	.0	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	176.	.0	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	360.	.0	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	184.	.0	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Aviano
RUN: 2025PP-05 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Aviano
RUN: 2025PP-05 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S Z0= 100. CM ALT= 91. (M)
BRG= WORST CASE VD= .0 CM/S
CLAS= 7 (G) VS= .0 CM/S
MIXH= 1000. M AMB= .0 PPM
SIGTH= 10. DEGREES TEMP= 10.0 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Project NBA	0	-150	0	0	AG	0	1.2	.0	10.0
B. Project NBD	0	0	0	150	AG	22	1.4	.0	10.0
C. Project NBL	2	-150	0	0	AG	0	1.2	.0	10.0
D. Project SBA	-5	150	-5	0	AG	9	1.9	.0	10.0
E. Project SBD	-5	0	-5	-150	AG	0	1.2	.0	10.0
F. Project SBL	-5	150	0	0	AG	10	2.1	.0	10.0
G. Sand Cre EBA	-150	-5	0	-5	AG	1019	2.1	.0	10.0
H. Sand Cre EBD	0	-5	150	-5	AG	1029	1.6	.0	10.0
I. Sand Cre EBL	-150	-5	0	0	AG	14	2.1	.0	10.0
J. Sand Cre WBA	150	4	0	4	AG	988	2.1	.0	10.0
K. Sand Cre WBD	0	4	-150	4	AG	989	1.6	.0	10.0
L. Sand Cre WBL	150	2	0	0	AG	0	1.2	.0	10.0
M. Project NBAX	0	-750	0	-150	AG	0	1.2	.0	10.0
N. Project NBDX	0	150	0	750	AG	22	1.2	.0	10.0
O. Project SBAX	-5	750	-5	150	AG	19	1.2	.0	10.0
P. Project SBDX	-5	-150	-5	-750	AG	0	1.2	.0	10.0
Q. Sand Cr EBAX	-750	-5	-150	-5	AG	1033	1.2	.0	10.0
R. Sand Cr EBDX	150	-5	750	-5	AG	1029	1.2	.0	10.0
S. Sand Cr WBAX	750	4	150	4	AG	988	1.2	.0	10.0
T. Sand Cr WBDX	-150	4	-750	4	AG	989	1.2	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Aviano
RUN: 2025PP-05 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	7	-12	1.8
2. NW	-12	10	1.8
3. SW	-12	-12	1.8
4. NE	7	10	1.8
5. ES mdblk	150	-12	1.8
6. WN mdblk	-150	10	1.8
7. WS mdblk	-150	-12	1.8
8. EN mdblk	150	10	1.8
9. SE mdblk	7	-150	1.8
10. NW mdblk	-12	150	1.8
11. SW mdblk	-12	-150	1.8
12. NE mdblk	7	150	1.8
13. ES blk	600	-12	1.8
14. WN blk	-600	10	1.8
15. WS blk	-600	-12	1.8
16. EN blk	600	10	1.8
17. SE blk	7	-600	1.8
18. NW blk	-12	600	1.8
19. SW blk	-12	-600	1.8
20. NE blk	7	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Aviano
RUN: 2025PP-06 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	278.	.5	.0	.0	.0	.0	.0	.0	.1	.0
2. NW	171.	.7	.0	.0	.0	.0	.3	.0	.0	.0
3. SW	8.	.7	.0	.0	.0	.3	.0	.0	.0	.0
4. NE	262.	.6	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	276.	.3	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	100.	.5	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	78.	.5	.0	.0	.0	.0	.0	.0	.2	.0
8. EN mdblk	265.	.3	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	352.	.4	.1	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	173.	.6	.0	.0	.0	.4	.0	.0	.0	.0
11. SW mdblk	7.	.5	.0	.0	.0	.0	.3	.0	.0	.0
12. NE mdblk	188.	.5	.0	.2	.0	.0	.0	.0	.0	.0
13. ES blk	275.	.2	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	97.	.3	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	83.	.3	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	265.	.2	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	353.	.3	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	174.	.3	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	6.	.3	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	187.	.3	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Aviano
RUN: 2025PP-06 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Aviano
RUN: 2025PP-06 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S Z0= 100. CM ALT= 91. (M)
BRG= WORST CASE VD= .0 CM/S
CLAS= 7 (G) VS= .0 CM/S
MIXH= 1000. M AMB= .0 PPM
SIGTH= 10. DEGREES TEMP= 10.0 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Hillcres NBA	7	-150	7	0	AG	439	1.8	.0	10.0
B. Hillcres NBD	7	0	7	150	AG	856	1.8	.0	10.0
C. Hillcres NBL	5	-150	0	0	AG	242	2.2	.0	10.0
D. Hillcres SBA	-7	150	-7	0	AG	1215	2.2	.0	10.0
E. Hillcres SBD	-7	0	-7	-150	AG	1203	2.0	.0	10.0
F. Hillcres SBL	-5	150	0	0	AG	29	2.1	.0	10.0
G. Sand Cre EBA	-150	-7	0	-7	AG	571	1.9	.0	10.0
H. Sand Cre EBD	0	-7	150	-7	AG	315	1.3	.0	10.0
I. Sand Cre EBL	-150	-5	0	0	AG	456	2.2	.0	10.0
J. Sand Cre WBA	150	7	0	7	AG	280	1.8	.0	10.0
K. Sand Cre WBD	0	7	-150	7	AG	989	2.0	.0	10.0
L. Sand Cre WBL	150	5	0	0	AG	131	2.1	.0	10.0
M. Hillcre NBAX	7	-750	7	-150	AG	681	1.2	.0	10.0
N. Hillcre NBDX	7	150	7	750	AG	856	1.2	.0	10.0
O. Hillcre SBAX	-7	750	-7	150	AG	1244	1.2	.0	10.0
P. Hillcre SBDX	-7	-150	-7	-750	AG	1203	1.2	.0	10.0
Q. Sand Cr EBAX	-750	-7	-150	-7	AG	1027	1.2	.0	10.0
R. Sand Cr EBDX	150	-7	750	-7	AG	315	1.2	.0	10.0
S. Sand Cr WBAX	750	7	150	7	AG	411	1.2	.0	10.0
T. Sand Cr WBDX	-150	7	-750	7	AG	989	1.2	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Aviano
RUN: 2025PP-06 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	14	-14	1.8
2. NW	-14	14	1.8
3. SW	-14	-14	1.8
4. NE	14	14	1.8
5. ES mdblk	150	-14	1.8
6. WN mdblk	-150	14	1.8
7. WS mdblk	-150	-14	1.8
8. EN mdblk	150	14	1.8
9. SE mdblk	14	-150	1.8
10. NW mdblk	-14	150	1.8
11. SW mdblk	-14	-150	1.8
12. NE mdblk	14	150	1.8
13. ES blk	600	-14	1.8
14. WN blk	-600	14	1.8
15. WS blk	-600	-14	1.8
16. EN blk	600	14	1.8
17. SE blk	14	-600	1.8
18. NW blk	-14	600	1.8
19. SW blk	-14	-600	1.8
20. NE blk	14	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Aviano
RUN: 2025PP-07 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	350.	.4	.0	.1	.0	.0	.0	.0	.0	.0
2. NW	8.	.4	.0	.0	.0	.3	.0	.0	.0	.0
3. SW	7.	.4	.0	.0	.0	.2	.0	.0	.0	.0
4. NE	187.	.4	.2	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	282.	.2	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	93.	.1	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	85.	.1	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	260.	.2	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	353.	.4	.2	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	172.	.4	.0	.0	.0	.3	.0	.0	.0	.0
11. SW mdblk	7.	.4	.0	.0	.0	.0	.2	.0	.0	.0
12. NE mdblk	188.	.4	.0	.2	.0	.0	.0	.0	.0	.0
13. ES blk	276.	.1	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	93.	.0	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	87.	.0	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	264.	.1	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	353.	.3	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	173.	.3	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	7.	.3	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	187.	.3	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Aviano
RUN: 2025PP-07 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Aviano
RUN: 2025PP-07 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S Z0= 100. CM ALT= 91. (M)
BRG= WORST CASE VD= .0 CM/S
CLAS= 7 (G) VS= .0 CM/S
MIXH= 1000. M AMB= .0 PPM
SIGTH= 10. DEGREES TEMP= 10.0 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Hillcres NBA	9	-150	9	0	AG	850	1.7	.0	13.5
B. Hillcres NBD	9	0	9	150	AG	1022	1.3	.0	10.0
C. Hillcres NBL	5	-150	0	0	AG	11	2.1	.0	10.0
D. Hillcres SBA	-9	150	-9	0	AG	1117	1.8	.0	13.5
E. Hillcres SBD	-9	0	-9	-150	AG	1241	1.3	.0	10.0
F. Hillcres SBL	-5	150	0	0	AG	144	2.1	.0	10.0
G. Project EBA	-150	-5	0	-5	AG	2	1.9	.0	10.0
H. Project EBD	0	-5	150	-5	AG	216	1.4	.0	10.0
I. Project EBL	-150	-5	0	0	AG	30	2.1	.0	10.0
J. Project WBA	150	5	0	5	AG	214	2.0	.0	10.0
K. Project WBD	0	5	-150	5	AG	60	1.4	.0	10.0
L. Project WBL	150	5	0	0	AG	171	2.1	.0	10.0
M. Hillcre NBAX	9	-750	9	-150	AG	861	1.2	.0	13.5
N. Hillcre NBDX	9	150	9	750	AG	1022	1.2	.0	10.0
O. Hillcre SBAX	-9	750	-9	150	AG	1261	1.2	.0	13.5
P. Hillcre SBDX	-9	-150	-9	-750	AG	1241	1.2	.0	10.0
Q. Project EBAX	-750	-5	-150	-5	AG	32	1.2	.0	10.0
R. Project EBDX	150	-5	750	-5	AG	216	1.2	.0	10.0
S. Project WBAX	750	5	150	5	AG	385	1.2	.0	10.0
T. Project WBDX	-150	5	-750	5	AG	60	1.2	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Aviano
RUN: 2025PP-07 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	17	-12	1.8
2. NW	-17	12	1.8
3. SW	-15	-12	1.8
4. NE	15	12	1.8
5. ES mdblk	150	-12	1.8
6. WN mdblk	-150	12	1.8
7. WS mdblk	-150	-12	1.8
8. EN mdblk	150	12	1.8
9. SE mdblk	17	-150	1.8
10. NW mdblk	-17	150	1.8
11. SW mdblk	-15	-150	1.8
12. NE mdblk	15	150	1.8
13. ES blk	600	-12	1.8
14. WN blk	-600	12	1.8
15. WS blk	-600	-12	1.8
16. EN blk	600	12	1.8
17. SE blk	17	-600	1.8
18. NW blk	-17	600	1.8
19. SW blk	-15	-600	1.8
20. NE blk	15	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Aviano
RUN: 2025PP-08 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	350.	.4	.0	.1	.0	.0	.0	.0	.0	.0
2. NW	8.	.5	.0	.0	.0	.3	.0	.0	.0	.0
3. SW	7.	.5	.0	.0	.0	.3	.0	.0	.0	.0
4. NE	187.	.4	.2	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	276.	.1	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	98.	.2	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	82.	.2	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	264.	.1	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	352.	.4	.2	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	172.	.5	.0	.0	.0	.3	.0	.0	.0	.0
11. SW mdblk	7.	.4	.0	.0	.0	.3	.0	.0	.0	.0
12. NE mdblk	188.	.4	.0	.2	.0	.0	.0	.0	.0	.0
13. ES blk	275.	.1	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	96.	.1	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	84.	.1	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	265.	.0	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	353.	.3	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	173.	.4	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	7.	.4	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	187.	.3	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Aviano
RUN: 2025PP-08 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.0	.0	.0	.3	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Aviano
RUN: 2025PP-08 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S ZO= 100. CM ALT= 91. (M)
BRG= WORST CASE VD= .0 CM/S
CLAS= 7 (G) VS= .0 CM/S
MIXH= 1000. M AMB= .0 PPM
SIGTH= 10. DEGREES TEMP= 10.0 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Hillcres NBA	9	-150	9	0	AG	965	1.7	.0	13.5
B. Hillcres NBD	9	0	9	150	AG	991	1.3	.0	10.0
C. Hillcres NBL	5	-150	0	0	AG	88	2.1	.0	10.0
D. Hillcres SBA	-9	150	-9	0	AG	1406	2.0	.0	13.5
E. Hillcres SBD	-9	0	-9	-150	AG	1412	1.4	.0	10.0
F. Hillcres SBL	-5	150	0	0	AG	22	2.1	.0	10.0
G. Prewett EBA	-150	-7	0	-7	AG	93	1.9	.0	10.0
H. Prewett EBD	0	-7	150	-7	AG	151	1.4	.0	10.0
I. Prewett EBL	-150	-5	0	0	AG	120	2.1	.0	10.0
J. Prewett WBA	150	7	0	7	AG	27	1.9	.0	10.0
K. Prewett WBD	0	7	-150	7	AG	281	1.4	.0	10.0
L. Prewett WBL	150	5	0	0	AG	114	2.1	.0	10.0
M. Hillcre NBAX	9	-750	9	-150	AG	1053	1.2	.0	13.5
N. Hillcre NBDX	9	150	9	750	AG	991	1.2	.0	10.0
O. Hillcre SBAX	-9	750	-9	150	AG	1428	1.2	.0	13.5
P. Hillcre SBDX	-9	-150	-9	-750	AG	1412	1.2	.0	10.0
Q. Prewett EBAX	-750	-7	-150	-7	AG	213	1.2	.0	10.0
R. Prewett EBDX	150	-7	750	-7	AG	151	1.2	.0	10.0
S. Prewett WBAX	750	7	150	7	AG	141	1.2	.0	10.0
T. Prewett WBDX	-150	7	-750	7	AG	281	1.2	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Aviano
RUN: 2025PP-08 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	17	-14	1.8
2. NW	-17	14	1.8
3. SW	-15	-14	1.8
4. NE	15	14	1.8
5. ES mdblk	150	-14	1.8
6. WN mdblk	-150	14	1.8
7. WS mdblk	-150	-14	1.8
8. EN mdblk	150	14	1.8
9. SE mdblk	17	-150	1.8
10. NW mdblk	-17	150	1.8
11. SW mdblk	-15	-150	1.8
12. NE mdblk	15	150	1.8
13. ES blk	600	-14	1.8
14. WN blk	-600	14	1.8
15. WS blk	-600	-14	1.8
16. EN blk	600	14	1.8
17. SE blk	17	-600	1.8
18. NW blk	-17	600	1.8
19. SW blk	-15	-600	1.8
20. NE blk	15	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Aviano
RUN: 2025PP-09 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	350.	.4	.0	.1	.0	.1	.0	.0	.0	.0
2. NW	8.	.5	.0	.0	.0	.4	.0	.0	.0	.0
3. SW	8.	.5	.0	.0	.0	.4	.0	.0	.0	.0
4. NE	187.	.5	.2	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	280.	.1	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	92.	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	87.	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	260.	.1	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	352.	.4	.2	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	172.	.6	.0	.0	.0	.4	.0	.0	.0	.0
11. SW mdblk	7.	.5	.0	.0	.0	.0	.3	.0	.0	.0
12. NE mdblk	188.	.4	.0	.2	.0	.1	.0	.0	.0	.0
13. ES blk	276.	.1	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	90.	.0	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	88.	.0	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	264.	.0	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	353.	.3	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	173.	.4	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	7.	.4	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	187.	.3	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Aviano
RUN: 2025PP-09 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	.0	.0	.0	.0	.2	.0	.0	.1	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.0	.3	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.0	.0	.0	.3	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.2	.1	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Aviano
RUN: 2025PP-09 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S Z0= 100. CM ALT= 91. (M)
BRG= WORST CASE VD= .0 CM/S
CLAS= 7 (G) VS= .0 CM/S
MIXH= 1000. M AMB= .0 PPM
SIGTH= 10. DEGREES TEMP= 10.0 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Hillcres NBA	5	-150	5	0	AG	1078	1.8	.0	13.5
B. Hillcres NBD	5	0	5	150	AG	1037	1.3	.0	10.0
C. Hillcres NBL	2	-150	0	0	AG	0	1.2	.0	10.0
D. Hillcres SBA	-7	150	-7	0	AG	1425	2.0	.0	10.0
E. Hillcres SBD	-7	0	-7	-150	AG	1304	1.4	.0	10.0
F. Hillcres SBL	-5	150	0	0	AG	103	2.1	.0	10.0
G. Vista Gr EBA	-150	0	0	0	AG	0	1.2	.0	10.0
H. Vista Gr EBD	0	0	150	0	AG	194	1.4	.0	10.0
I. Vista Gr EBL	-150	-2	0	0	AG	0	1.2	.0	10.0
J. Vista Gr WBA	150	5	0	5	AG	50	1.9	.0	10.0
K. Vista Gr WBD	0	5	-150	5	AG	0	1.2	.0	10.0
L. Vista Gr WBL	150	5	0	0	AG	79	2.1	.0	10.0
M. Hillcre NBAX	5	-750	5	-150	AG	1078	1.2	.0	13.5
N. Hillcre NBDX	5	150	5	750	AG	1037	1.2	.0	10.0
O. Hillcre SBAX	-7	750	-7	150	AG	1528	1.2	.0	10.0
P. Hillcre SBDX	-7	-150	-7	-750	AG	1504	1.2	.0	10.0
Q. Vista G EBAX	-750	0	-150	0	AG	0	1.2	.0	10.0
R. Vista G EBDX	150	0	750	0	AG	194	1.2	.0	10.0
S. Vista G WBAX	750	5	150	5	AG	129	1.2	.0	10.0
T. Vista G WBDX	-150	5	-750	5	AG	0	1.2	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Aviano
RUN: 2025PP-09 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	14	-7	1.8
2. NW	-14	12	1.8
3. SW	-14	-7	1.8
4. NE	12	12	1.8
5. ES mdblk	150	-7	1.8
6. WN mdblk	-150	12	1.8
7. WS mdblk	-150	-7	1.8
8. EN mdblk	150	12	1.8
9. SE mdblk	14	-150	1.8
10. NW mdblk	-14	150	1.8
11. SW mdblk	-14	-150	1.8
12. NE mdblk	12	150	1.8
13. ES blk	600	-7	1.8
14. WN blk	-600	12	1.8
15. WS blk	-600	-7	1.8
16. EN blk	600	12	1.8
17. SE blk	14	-600	1.8
18. NW blk	-14	600	1.8
19. SW blk	-14	-600	1.8
20. NE blk	12	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Aviano
RUN: 2025PP-10 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	280.	.9	.0	.0	.0	.0	.0	.0	.3	.2
2. NW	98.	1.1	.0	.0	.0	.0	.0	.0	.0	.1
3. SW	79.	1.1	.0	.0	.0	.0	.1	.0	.1	.4
4. NE	257.	.9	.0	.1	.0	.0	.0	.0	.2	.6
5. ES mdblk	280.	1.0	.0	.0	.0	.0	.0	.0	.0	.7
6. WN mdblk	98.	.8	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	82.	.9	.0	.0	.0	.0	.0	.0	.5	.0
8. EN mdblk	260.	1.0	.0	.0	.0	.0	.0	.0	.0	.1
9. SE mdblk	352.	.5	.1	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	170.	.6	.0	.0	.0	.2	.0	.1	.0	.0
11. SW mdblk	8.	.6	.0	.0	.0	.0	.3	.0	.0	.0
12. NE mdblk	188.	.6	.0	.2	.0	.0	.0	.0	.0	.0
13. ES blk	277.	.7	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	97.	.5	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	83.	.5	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	263.	.6	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	354.	.4	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	173.	.5	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	7.	.4	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	187.	.4	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Aviano
RUN: 2025PP-10 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	.0	.4	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	.0	.2	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.5	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.3
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.3	.0	.0	.0
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.4	.0
17. SE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.0	.0	.0	.3	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Aviano
RUN: 2025PP-10 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S Z0= 100. CM ALT= 91. (M)
BRG= WORST CASE VD= .0 CM/S
CLAS= 7 (G) VS= .0 CM/S
MIXH= 1000. M AMB= .0 PPM
SIGTH= 10. DEGREES TEMP= 10.0 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Hillcres NBA	9	-150	9	0	AG	606	1.8	.0	13.5
B. Hillcres NBD	9	0	9	150	AG	1240	1.4	.0	10.0
C. Hillcres NBL	5	-150	0	0	AG	342	2.2	.0	10.0
D. Hillcres SBA	-9	150	-9	0	AG	638	1.8	.0	13.5
E. Hillcres SBD	-9	0	-9	-150	AG	1422	1.6	.0	10.0
F. Hillcres SBL	-5	150	0	0	AG	902	2.2	.0	10.0
G. Lone Tre EBA	-150	-9	0	-9	AG	1720	2.2	.0	13.5
H. Lone Tre EBD	0	-9	150	-9	AG	2690	2.0	.0	10.0
I. Lone Tre EBL	-150	-5	0	0	AG	277	2.2	.0	10.0
J. Lone Tre WBA	150	9	0	9	AG	1997	2.2	.0	13.5
K. Lone Tre WBD	0	9	-150	9	AG	1701	1.8	.0	10.0
L. Lone Tre WBL	150	5	0	0	AG	571	2.2	.0	10.0
M. Hillcre NBAX	9	-750	9	-150	AG	948	1.2	.0	13.5
N. Hillcre NBDX	9	150	9	750	AG	1240	1.2	.0	10.0
O. Hillcre SBAX	-9	750	-9	150	AG	1540	1.2	.0	13.5
P. Hillcre SBDX	-9	-150	-9	-750	AG	1422	1.2	.0	10.0
Q. Lone Tr EBAX	-750	-9	-150	-9	AG	1997	1.2	.0	13.5
R. Lone Tr EBDX	150	-9	750	-9	AG	2690	1.2	.0	10.0
S. Lone Tr WBAX	750	9	150	9	AG	2568	1.2	.0	13.5
T. Lone Tr WBDX	-150	9	-750	9	AG	1701	1.2	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Aviano
RUN: 2025PP-10 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	17	-15	1.8
2. NW	-17	15	1.8
3. SW	-15	-17	1.8
4. NE	15	17	1.8
5. ES mdblk	150	-15	1.8
6. WN mdblk	-150	15	1.8
7. WS mdblk	-150	-17	1.8
8. EN mdblk	150	17	1.8
9. SE mdblk	17	-150	1.8
10. NW mdblk	-17	150	1.8
11. SW mdblk	-15	-150	1.8
12. NE mdblk	15	150	1.8
13. ES blk	600	-15	1.8
14. WN blk	-600	15	1.8
15. WS blk	-600	-17	1.8
16. EN blk	600	17	1.8
17. SE blk	17	-600	1.8
18. NW blk	-17	600	1.8
19. SW blk	-15	-600	1.8
20. NE blk	15	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Aviano
RUN: 2025PP-11 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	278.	.9	.0	.0	.0	.0	.0	.0	.5	.1
2. NW	98.	.9	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	77.	.8	.0	.0	.0	.0	.0	.0	.2	.3
4. NE	100.	.8	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	279.	.8	.0	.0	.0	.0	.0	.0	.0	.5
6. WN mdblk	99.	.8	.0	.0	.0	.0	.0	.0	.1	.0
7. WS mdblk	81.	.9	.0	.0	.0	.0	.0	.0	.6	.0
8. EN mdblk	261.	.9	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	352.	.2	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	173.	.2	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	7.	.2	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	186.	.2	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	277.	.6	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	97.	.6	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	83.	.6	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	263.	.6	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	354.	.2	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	175.	.1	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	6.	.2	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	185.	.1	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Aviano
RUN: 2025PP-11 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	.0	.5	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	.0	.6	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.5	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.6	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Aviano
RUN: 2025PP-11 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S Z0= 100. CM ALT= 91. (M)
BRG= WORST CASE VD= .0 CM/S
CLAS= 7 (G) VS= .0 CM/S
MIXH= 1000. M AMB= .0 PPM
SIGTH= 10. DEGREES TEMP= 10.0 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Vista Gr NBA	7	-150	7	0	AG	192	1.9	.0	10.0
B. Vista Gr NBD	7	0	7	150	AG	189	1.4	.0	10.0
C. Vista Gr NBL	5	-150	0	0	AG	90	2.1	.0	10.0
D. Vista Gr SBA	-7	150	-7	0	AG	139	1.9	.0	10.0
E. Vista Gr SBD	-7	0	-7	-150	AG	245	1.4	.0	10.0
F. Vista Gr SBL	-5	150	0	0	AG	82	2.1	.0	10.0
G. Lone Tre EBA	-150	-9	0	-9	AG	2334	2.1	.0	13.5
H. Lone Tre EBD	0	-9	150	-9	AG	2468	1.6	.0	10.0
I. Lone Tre EBL	-150	-5	0	0	AG	75	2.1	.0	10.0
J. Lone Tre WBA	150	9	0	9	AG	2329	2.1	.0	13.5
K. Lone Tre WBD	0	9	-150	9	AG	2469	1.6	.0	10.0
L. Lone Tre WBL	150	5	0	0	AG	130	2.1	.0	10.0
M. Vista G NBAX	7	-750	7	-150	AG	282	1.2	.0	10.0
N. Vista G NBDX	7	150	7	750	AG	189	1.2	.0	10.0
O. Vista G SBAX	-7	750	-7	150	AG	221	1.2	.0	10.0
P. Vista G SBDX	-7	-150	-7	-750	AG	245	1.2	.0	10.0
Q. Lone Tr EBAX	-750	-9	-150	-9	AG	2409	1.2	.0	13.5
R. Lone Tr EBDX	150	-9	750	-9	AG	2468	1.2	.0	10.0
S. Lone Tr WBAX	750	9	150	9	AG	2459	1.2	.0	13.5
T. Lone Tr WBDX	-150	9	-750	9	AG	2469	1.2	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Aviano
RUN: 2025PP-11 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	14	-15	1.8
2. NW	-14	15	1.8
3. SW	-14	-17	1.8
4. NE	14	17	1.8
5. ES mdblk	150	-15	1.8
6. WN mdblk	-150	15	1.8
7. WS mdblk	-150	-17	1.8
8. EN mdblk	150	17	1.8
9. SE mdblk	14	-150	1.8
10. NW mdblk	-14	150	1.8
11. SW mdblk	-14	-150	1.8
12. NE mdblk	14	150	1.8
13. ES blk	600	-15	1.8
14. WN blk	-600	15	1.8
15. WS blk	-600	-17	1.8
16. EN blk	600	17	1.8
17. SE blk	14	-600	1.8
18. NW blk	-14	600	1.8
19. SW blk	-14	-600	1.8
20. NE blk	14	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Aviano
RUN: 2025PP-12 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	278.	1.0	.0	.0	.0	.0	.0	.0	.5	.2
2. NW	98.	1.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	77.	1.0	.0	.0	.0	.0	.0	.0	.2	.4
4. NE	100.	1.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	279.	1.0	.0	.0	.0	.0	.0	.0	.0	.6
6. WN mdblk	99.	1.0	.0	.0	.0	.0	.0	.0	.1	.0
7. WS mdblk	82.	1.0	.0	.0	.0	.0	.0	.0	.7	.0
8. EN mdblk	260.	1.1	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	347.	.3	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	175.	.2	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	12.	.3	.0	.0	.0	.0	.1	.0	.0	.0
12. NE mdblk	185.	.2	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	277.	.7	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	98.	.7	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	83.	.6	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	262.	.7	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	354.	.2	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	177.	.1	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	7.	.2	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	183.	.1	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Aviano
RUN: 2025PP-12 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	.0	.6	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	.0	.7	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.6	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.7	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.5
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.4	.0	.0	.1
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.5	.0
18. NW blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Aviano
RUN: 2025PP-12 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S Z0= 100. CM ALT= 91. (M)
BRG= WORST CASE VD= .0 CM/S
CLAS= 7 (G) VS= .0 CM/S
MIXH= 1000. M AMB= .0 PPM
SIGTH= 10. DEGREES TEMP= 10.0 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Heidorn NBA	11	-150	11	0	AG	264	2.0	.0	10.0
B. Heidorn NBD	11	0	11	150	AG	67	1.4	.0	10.0
C. Heidorn NBL	9	-150	0	0	AG	250	2.1	.0	10.0
D. Heidorn SBA	-7	150	-7	0	AG	32	1.9	.0	10.0
E. Heidorn SBD	-7	0	-7	-150	AG	565	1.4	.0	10.0
F. Heidorn SBL	-5	150	0	0	AG	38	2.1	.0	10.0
G. Lone Tre EBA	-150	-9	0	-9	AG	2789	2.1	.0	13.5
H. Lone Tre EBD	0	-9	150	-9	AG	2944	1.6	.0	10.0
I. Lone Tre EBL	-150	-5	0	0	AG	7	2.1	.0	10.0
J. Lone Tre WBA	150	9	0	9	AG	2880	2.1	.0	13.5
K. Lone Tre WBD	0	9	-150	9	AG	3104	1.6	.0	10.0
L. Lone Tre WBL	150	5	0	0	AG	420	2.2	.0	10.0
M. Heidorn NBAX	11	-750	11	-150	AG	514	1.2	.0	10.0
N. Heidorn NBDX	11	150	11	750	AG	67	1.2	.0	10.0
O. Heidorn SBAX	-7	750	-7	150	AG	70	1.2	.0	10.0
P. Heidorn SBDX	-7	-150	-7	-750	AG	565	1.2	.0	10.0
Q. Lone Tr EBAX	-750	-9	-150	-9	AG	2796	1.2	.0	13.5
R. Lone Tr EBDX	150	-9	750	-9	AG	2944	1.2	.0	10.0
S. Lone Tr WBAX	750	9	150	9	AG	3300	1.2	.0	13.5
T. Lone Tr WBDX	-150	9	-750	9	AG	3104	1.2	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Aviano
RUN: 2025PP-12 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	17	-15	1.8
2. NW	-14	15	1.8
3. SW	-14	-17	1.8
4. NE	17	17	1.8
5. ES mdblk	190	-15	1.8
6. WN mdblk	-150	15	1.8
7. WS mdblk	-150	-17	1.8
8. EN mdblk	150	17	1.8
9. SE mdblk	17	-150	1.8
10. NW mdblk	-14	150	1.8
11. SW mdblk	-14	-150	1.8
12. NE mdblk	17	150	1.8
13. ES blk	600	-15	1.8
14. WN blk	-600	15	1.8
15. WS blk	-600	-17	1.8
16. EN blk	600	17	1.8
17. SE blk	17	-600	1.8
18. NW blk	-14	600	1.8
19. SW blk	-14	-600	1.8
20. NE blk	17	600	1.8

JOB: Aviano
RUN: 2025PP-13 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	279.	1.1	.0	.0	.0	.0	.0	.0	.5	.2
2. NW	98.	1.2	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	76.	1.0	.0	.0	.0	.0	.1	.0	.1	.5
4. NE	256.	1.1	.0	.0	.0	.0	.0	.0	.2	.0
5. ES mdblk	280.	1.0	.0	.0	.0	.0	.0	.0	.0	.7
6. WN mdblk	99.	1.0	.0	.0	.0	.0	.0	.0	.0	.1
7. WS mdblk	81.	1.0	.0	.0	.0	.0	.0	.0	.6	.0
8. EN mdblk	260.	1.2	.0	.0	.0	.0	.0	.0	.1	.0
9. SE mdblk	352.	.4	.2	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	171.	.5	.0	.0	.0	.0	.0	.1	.0	.0
11. SW mdblk	8.	.5	.0	.0	.0	.0	.2	.0	.0	.0
12. NE mdblk	187.	.5	.0	.2	.0	.0	.0	.0	.0	.0
13. ES blk	278.	.8	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	98.	.8	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	82.	.7	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	262.	.8	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	354.	.3	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	174.	.3	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	6.	.3	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	186.	.3	.0	.0	.0	.0	.0	.0	.0	.0

JOB: Aviano
RUN: 2025PP-13 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	.0	.7	.1	.0	.0	.0	.0	.0	.0	.1	.0	.0
3. SW	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	.0	.3	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.6	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.8	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.5
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.4	.0	.0	.1
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.6	.0
17. SE blk	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0

JOB: Aviano
RUN: 2025PP-13 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S Z0= 100. CM ALT= 91. (M)
BRG= WORST CASE VD= .0 CM/S
CLAS= 7 (G) VS= .0 CM/S
MIXH= 1000. M AMB= .0 PPM
SIGTH= 10. DEGREES TEMP= 10.0 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Canada V NBA	12	-150	12	0	AG	566	2.0	.0	13.5
B. Canada V NBD	12	0	12	150	AG	713	1.5	.0	10.0
C. Canada V NBL	9	-150	0	0	AG	192	2.1	.0	10.0
D. Canada V SBA	-7	150	-7	0	AG	183	1.9	.0	10.0
E. Canada V SBD	-7	0	-7	-150	AG	755	2.2	.0	10.0
F. Canada V SBL	-5	150	0	0	AG	598	2.2	.0	10.0
G. Lone Tre EBA	-150	-14	0	-14	AG	2848	2.1	.0	17.0
H. Lone Tre EBD	0	-14	150	-14	AG	3817	1.6	.0	13.5
I. Lone Tre EBL	-150	-9	0	0	AG	189	2.1	.0	10.0
J. Lone Tre WBA	150	12	0	12	AG	3399	2.1	.0	13.5
K. Lone Tre WBD	0	12	-150	12	AG	3265	1.6	.0	10.0
L. Lone Tre WBL	150	9	0	0	AG	375	2.2	.0	10.0
M. Canada NBAX	12	-750	12	-150	AG	758	1.2	.0	13.5
N. Canada NBDX	12	150	12	750	AG	713	1.2	.0	10.0
O. Canada SBAX	-7	750	-7	150	AG	781	1.2	.0	10.0
P. Canada SBDX	-7	-150	-7	-750	AG	755	1.2	.0	10.0
Q. Lone Tr EBAX	-750	-14	-150	-14	AG	3037	1.2	.0	17.0
R. Lone Tr EBDX	150	-14	750	-14	AG	3817	1.2	.0	13.5
S. Lone Tr WBAX	750	12	150	12	AG	3974	1.2	.0	13.5
T. Lone Tr WBDX	-150	12	-750	12	AG	3265	1.2	.0	10.0

JOB: Aviano
RUN: 2025PP-13 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	21	-22	1.8
2. NW	-14	19	1.8
3. SW	-14	-24	1.8
4. NE	19	21	1.8
5. ES mdblk	150	-22	1.8
6. WN mdblk	-150	19	1.8
7. WS mdblk	-150	-24	1.8
8. EN mdblk	150	21	1.8
9. SE mdblk	21	-150	1.8
10. NW mdblk	-14	150	1.8
11. SW mdblk	-14	-150	1.8
12. NE mdblk	19	150	1.8
13. ES blk	600	-22	1.8
14. WN blk	-600	19	1.8
15. WS blk	-600	-24	1.8
16. EN blk	600	21	1.8
17. SE blk	21	-600	1.8
18. NW blk	-14	600	1.8
19. SW blk	-14	-600	1.8
20. NE blk	19	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Aviano
RUN: 2025PP-14 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	277.	1.5	.0	.0	.0	.0	.2	.0	.9	.0
2. NW	99.	1.4	.0	.0	.0	.0	.0	.0	.0	.2
3. SW	77.	1.4	.0	.0	.0	.0	.2	.0	.2	.4
4. NE	100.	1.4	.0	.0	.0	.0	.0	.0	.0	.2
5. ES mdblk	279.	1.2	.0	.0	.0	.0	.0	.0	.0	.6
6. WN mdblk	99.	1.3	.0	.0	.0	.0	.0	.0	.3	.0
7. WS mdblk	82.	1.3	.0	.0	.0	.0	.0	.0	.9	.0
8. EN mdblk	261.	1.6	.0	.0	.0	.0	.0	.0	.1	.2
9. SE mdblk	349.	.4	.0	.0	.0	.0	.2	.0	.0	.0
10. NW mdblk	174.	.4	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	8.	.7	.0	.0	.0	.0	.5	.0	.0	.0
12. NE mdblk	186.	.4	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	277.	.9	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	97.	1.0	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	82.	.9	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	263.	1.0	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	353.	.3	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	175.	.2	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	6.	.4	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	185.	.2	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Aviano
RUN: 2025PP-14 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.1
2. NW	.0	.8	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	.0	.3	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.8	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.1	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	1.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.6
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.5	.0	.0	.2
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0
17. SE blk	.0	.0	.0	.0	.0	.0	.0	.0	.2	.7	.0	
18. NW blk	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.0	.0	.0	.3	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Aviano
RUN: 2025PP-14 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S Z0= 100. CM ALT= 91. (M)
BRG= WORST CASE VD= .0 CM/S
CLAS= 7 (G) VS= .0 CM/S
MIXH= 1000. M AMB= .0 PPM
SIGTH= 10. DEGREES TEMP= 10.0 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. SR-4 Byp NBA	0	-150	0	0	AG	0	1.2	.0	10.0
B. SR-4 Byp NBD	0	0	0	150	AG	0	1.2	.0	10.0
C. SR-4 Byp NBL	2	-150	0	0	AG	0	1.2	.0	10.0
D. SR-4 Byp SBA	-7	150	-7	0	AG	222	2.0	.0	10.0
E. SR-4 Byp SBD	-7	0	-7	-150	AG	1601	2.2	.0	10.0
F. SR-4 Byp SBL	-5	150	0	0	AG	421	2.2	.0	10.0
G. Lone Tre EBA	-150	-5	0	-5	AG	3779	2.1	.0	13.5
H. Lone Tre EBD	0	-5	150	-5	AG	3180	1.6	.0	10.0
I. Lone Tre EBL	-150	-2	0	0	AG	0	1.2	.0	10.0
J. Lone Tre WBA	150	7	0	7	AG	3938	2.1	.0	10.0
K. Lone Tre WBD	0	7	-150	7	AG	4160	1.6	.0	10.0
L. Lone Tre WBL	150	5	0	0	AG	581	2.2	.0	10.0
M. SR-4 By NBAX	0	-750	0	-150	AG	0	1.2	.0	10.0
N. SR-4 By NBDX	0	150	0	750	AG	0	1.2	.0	10.0
O. SR-4 By SBAX	-7	750	-7	150	AG	643	1.2	.0	10.0
P. SR-4 By SBDX	-7	-150	-7	-750	AG	1601	1.2	.0	10.0
Q. Lone Tr EBAX	-750	-5	-150	-5	AG	3779	1.2	.0	13.5
R. Lone Tr EBDX	150	-5	750	-5	AG	3180	1.2	.0	10.0
S. Lone Tr WBAX	750	7	150	7	AG	4519	1.2	.0	10.0
T. Lone Tr WBDX	-150	7	-750	7	AG	4160	1.2	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Aviano
RUN: 2025PP-14 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	7	-12	1.8
2. NW	-14	14	1.8
3. SW	-14	-14	1.8
4. NE	7	14	1.8
5. ES mdblk	150	-12	1.8
6. WN mdblk	-150	14	1.8
7. WS mdblk	-150	-14	1.8
8. EN mdblk	150	14	1.8
9. SE mdblk	7	-150	1.8
10. NW mdblk	-14	150	1.8
11. SW mdblk	-14	-150	1.8
12. NE mdblk	7	150	1.8
13. ES blk	600	-12	1.8
14. WN blk	-600	14	1.8
15. WS blk	-600	-14	1.8
16. EN blk	600	14	1.8
17. SE blk	7	-600	1.8
18. NW blk	-14	600	1.8
19. SW blk	-14	-600	1.8
20. NE blk	7	600	1.8

JOB: Aviano
RUN: 2025PP-15 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	279.	.5	.0	.0	.0	.0	.0	.0	.3	.0
2. NW	99.	.4	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	81.	.5	.0	.0	.0	.0	.0	.0	.0	.3
4. NE	261.	.4	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	278.	.5	.0	.0	.0	.0	.0	.0	.0	.3
6. WN mdblk	98.	.5	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	82.	.5	.0	.0	.0	.0	.0	.0	.3	.0
8. EN mdblk	262.	.5	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	351.	.2	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	176.	.2	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	9.	.2	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	183.	.2	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	276.	.3	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	96.	.3	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	84.	.3	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	264.	.3	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	354.	.2	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	175.	.0	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	6.	.2	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	183.	.0	.0	.0	.0	.0	.0	.0	.0	.0

JOB: Aviano
RUN: 2025PP-15 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0
17. SE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0
18. NW blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

JOB: Aviano
RUN: 2025PP-15 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S Z0= 100. CM ALT= 91. (M)
BRG= WORST CASE VD= .0 CM/S
CLAS= 7 (G) VS= .0 CM/S
MIXH= 1000. M AMB= .0 PPM
SIGTH= 10. DEGREES TEMP= 10.0 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. High Sch NBA	4	-150	4	0	AG	210	1.6	.0	10.0
B. High Sch NBD	4	0	4	150	AG	102	1.3	.0	10.0
C. High Sch NBL	2	-150	0	0	AG	88	2.1	.0	10.0
D. High Sch SBA	-4	150	-4	0	AG	81	1.6	.0	10.0
E. High Sch SBD	-4	0	-4	-150	AG	382	1.3	.0	10.0
F. High Sch SBL	-2	150	0	0	AG	20	2.1	.0	10.0
G. Sand Cre EBA	-150	-7	0	-7	AG	923	2.2	.0	10.0
H. Sand Cre EBD	0	-7	150	-7	AG	1032	2.2	.0	10.0
I. Sand Cre EBL	-150	-5	0	0	AG	66	2.1	.0	10.0
J. Sand Cre WBA	150	7	0	7	AG	727	2.2	.0	10.0
K. Sand Cre WBD	0	7	-150	7	AG	858	2.2	.0	10.0
L. Sand Cre WBL	150	5	0	0	AG	259	2.2	.0	10.0
M. High Sc NBAX	4	-750	4	-150	AG	298	1.2	.0	10.0
N. High Sc NBDX	4	150	4	750	AG	102	1.2	.0	10.0
O. High Sc SBAX	-4	750	-4	150	AG	101	1.2	.0	10.0
P. High Sc SBDX	-4	-150	-4	-750	AG	382	1.2	.0	10.0
Q. Sand Cr EBAX	-750	-7	-150	-7	AG	989	1.2	.0	10.0
R. Sand Cr EBDX	150	-7	750	-7	AG	1032	1.2	.0	10.0
S. Sand Cr WBAX	750	7	150	7	AG	986	1.2	.0	10.0
T. Sand Cr WBDX	-150	7	-750	7	AG	858	1.2	.0	10.0

JOB: Aviano
RUN: 2025PP-15 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	10	-14	1.8
2. NW	-10	14	1.8
3. SW	-10	-14	1.8
4. NE	10	14	1.8
5. ES mdblk	150	-14	1.8
6. WN mdblk	-150	14	1.8
7. WS mdblk	-150	-14	1.8
8. EN mdblk	150	14	1.8
9. SE mdblk	10	-150	1.8
10. NW mdblk	-10	150	1.8
11. SW mdblk	-10	-150	1.8
12. NE mdblk	10	150	1.8
13. ES blk	600	-14	1.8
14. WN blk	-600	14	1.8
15. WS blk	-600	-14	1.8
16. EN blk	600	14	1.8
17. SE blk	10	-600	1.8
18. NW blk	-10	600	1.8
19. SW blk	-10	-600	1.8
20. NE blk	10	600	1.8

APPENDIX D-2

URBAN EMISSION MODEL DATA

10/30/2008 7:57:04 AM

Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: P:\CAN0601 Aviano\Background\Aviano(rev).urb924

Project Name: Aviano Adult Community Project

Project Location: Contra Costa County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

10/30/2008 7:57:04 AM

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2011 TOTALS (lbs/day unmitigated)	13.83	73.53	116.86	0.11	465.01	3.93	468.66	97.11	3.59	100.47	15,039.45
2012 TOTALS (lbs/day unmitigated)	625.58	33.14	102.87	0.10	0.49	1.96	2.45	0.18	1.78	1.95	12,840.33
2013 TOTALS (lbs/day unmitigated)	5.92	30.07	88.92	0.10	0.46	1.75	2.21	0.16	1.58	1.75	12,108.35

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	38.74	6.99	28.28	0.00	0.08	0.08	8,599.02

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	21.73	22.32	236.53	0.25	43.75	8.38	24,926.41

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	60.47	29.31	264.81	0.25	43.83	8.46	33,525.43

10/30/2008 7:57:18 AM

Urbemis 2007 Version 9.2.4

Combined Winter Emissions Reports (Pounds/Day)

File Name: P:\CAN0601 Aviano\Background\Aviano(rev).urb924

Project Name: Aviano Adult Community Project

Project Location: Contra Costa County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

10/30/2008 7:57:18 AM

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2011 TOTALS (lbs/day unmitigated)	13.83	73.53	116.86	0.11	465.01	3.93	468.66	97.11	3.59	100.47	15,039.45
2012 TOTALS (lbs/day unmitigated)	625.58	33.14	102.87	0.10	0.49	1.96	2.45	0.18	1.78	1.95	12,840.33
2013 TOTALS (lbs/day unmitigated)	5.92	30.07	88.92	0.10	0.46	1.75	2.21	0.16	1.58	1.75	12,108.35

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	34.56	11.14	4.74	0.03	0.37	0.36	14,222.57

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	20.94	33.20	249.48	0.22	43.75	8.38	21,559.89

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	55.50	44.34	254.22	0.25	44.12	8.74	35,782.46

10/30/2008 7:57:29 AM

Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: P:\CAN0601 Aviano\Background\Aviano(rev).urb924

Project Name: Aviano Adult Community Project

Project Location: Contra Costa County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

10/30/2008 7:57:29 AM

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2011 TOTALS (tons/year unmitigated)	0.61	3.33	7.20	0.01	5.15	0.19	5.34	1.08	0.18	1.25	887.23
2012 TOTALS (tons/year unmitigated)	14.41	2.43	7.25	0.01	0.03	0.14	0.18	0.01	0.13	0.14	912.22
2013 TOTALS (tons/year unmitigated)	0.01	0.03	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	12.11

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	6.66	1.25	2.81	0.00	0.01	0.01	1,568.34

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	3.92	4.74	43.95	0.04	7.98	1.53	4,344.27

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	10.58	5.99	46.76	0.04	7.99	1.54	5,912.61

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2

2011	0.61	3.33	7.20	0.01	5.15	0.19	5.34	1.08	0.18	1.25	887.23
Fine Grading 03/03/2011-04/03/2011	0.10	0.81	0.43	0.00	5.12	0.04	5.16	1.07	0.04	1.11	81.91
Fine Grading Dust	0.00	0.00	0.00	0.00	5.12	0.00	5.12	1.07	0.00	1.07	0.00
Fine Grading Off Road Diesel	0.10	0.81	0.41	0.00	0.00	0.04	0.04	0.00	0.04	0.04	79.38
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.52
Asphalt 04/02/2011-04/26/2011	0.06	0.22	0.12	0.00	0.00	0.02	0.02	0.00	0.01	0.01	25.00
Paving Off-Gas	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.02	0.14	0.08	0.00	0.00	0.01	0.01	0.00	0.01	0.01	10.82
Paving On Road Diesel	0.01	0.08	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.10
Paving Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.08
Building 04/05/2011-10/01/2011	0.46	2.30	6.65	0.01	0.03	0.14	0.17	0.01	0.12	0.14	780.32
Building Off Road Diesel	0.24	1.41	0.90	0.00	0.00	0.10	0.10	0.00	0.09	0.09	145.72
Building Vendor Trips	0.04	0.60	0.46	0.00	0.00	0.02	0.03	0.00	0.02	0.02	127.81
Building Worker Trips	0.17	0.29	5.29	0.00	0.02	0.01	0.04	0.01	0.01	0.02	506.78
2012	14.41	2.43	7.25	0.01	0.03	0.14	0.18	0.01	0.13	0.14	912.22
Building 06/07/2012-01/02/2013	0.48	2.42	7.09	0.01	0.03	0.14	0.18	0.01	0.13	0.14	895.64
Building Off Road Diesel	0.26	1.51	1.01	0.00	0.00	0.11	0.11	0.00	0.10	0.10	167.19
Building Vendor Trips	0.05	0.61	0.50	0.00	0.01	0.02	0.03	0.00	0.02	0.02	146.64
Building Worker Trips	0.18	0.30	5.58	0.01	0.03	0.02	0.04	0.01	0.01	0.02	581.82
Coating 10/22/2012-12/22/2012	13.93	0.01	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	16.58
Architectural Coating	13.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.01	0.01	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	16.58

2013	0.01	0.03	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	12.11
Building 06/07/2012-01/02/2013	0.01	0.03	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	12.11
Building Off Road Diesel	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.26
Building Vendor Trips	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.98
Building Worker Trips	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.87

Phase Assumptions

Phase: Fine Grading 3/3/2011 - 4/3/2011 - Default Fine Site Grading Description

Total Acres Disturbed: 93

Maximum Daily Acreage Disturbed: 23.25

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

1 Graders (174 hp) operating at a 0.61 load factor for 8 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 8 hours per day

2 Scrapers (313 hp) operating at a 0.72 load factor for 8 hours per day

3 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 4/2/2011 - 4/26/2011 - Default Paving Description

Acres to be Paved: 23.25

Off-Road Equipment:

1 Pavers (100 hp) operating at a 0.62 load factor for 8 hours per day

2 Paving Equipment (104 hp) operating at a 0.53 load factor for 6 hours per day

2 Rollers (95 hp) operating at a 0.56 load factor for 6 hours per day

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Phase: Building Construction 4/5/2011 - 10/1/2011 - Default Building Construction Description

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 7 hours per day

3 Forklifts (145 hp) operating at a 0.3 load factor for 8 hours per day

1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day

3 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Building Construction 6/7/2012 - 1/2/2013 - Default building construction description

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 7 hours per day

3 Forklifts (145 hp) operating at a 0.3 load factor for 8 hours per day

1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day

3 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 10/22/2012 - 12/22/2012 - Default Architectural Coating Description

Rule: Residential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

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Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.09	1.22	0.52	0.00	0.00	0.00	1,561.81
Hearth	0.00	0.00	0.00	0.00	0.00	0.00	2.83
Landscape	0.40	0.03	2.29	0.00	0.01	0.01	3.70
Consumer Products	4.78						
Architectural Coatings	1.39						
TOTALS (tons/year, unmitigated)	6.66	1.25	2.81	0.00	0.01	0.01	1,568.34

Area Source Changes to Defaults

Percentage of residences with wood stoves changed from 35% to 0%

Percentage of residences with wood fireplaces changed from 10% to 0%

Percentage of residences with natural gas fireplaces changed from 55% to 100%

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Retirement community	3.92	4.74	43.95	0.04	7.98	1.53	4,344.27
TOTALS (tons/year, unmitigated)	3.92	4.74	43.95	0.04	7.98	1.53	4,344.27

Operational Settings:

Does not include correction for passby trips

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Does not include double counting adjustment for internal trips

Analysis Year: 2013 Season: Annual

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Retirement community	93.00	5.56	dwelling units	535.00	2,974.60	25,431.94
					2,974.60	25,431.94

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	50.9	0.6	99.2	0.2
Light Truck < 3750 lbs	13.2	0.8	96.2	3.0
Light Truck 3751-5750 lbs	20.4	0.5	99.5	0.0
Med Truck 5751-8500 lbs	7.7	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	1.1	0.0	72.7	27.3
Lite-Heavy Truck 10,001-14,000 lbs	0.6	0.0	50.0	50.0
Med-Heavy Truck 14,001-33,000 lbs	0.7	0.0	14.3	85.7
Heavy-Heavy Truck 33,001-60,000 lbs	0.4	0.0	0.0	100.0
Other Bus	0.0	0.0	0.0	0.0
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	3.7	54.1	45.9	0.0
School Bus	0.4	0.0	0.0	100.0
Motor Home	0.8	0.0	87.5	12.5

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Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	10.8	7.3	7.5	9.5	7.4	7.4
Rural Trip Length (miles)	16.8	7.1	7.9	14.7	6.6	6.6
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			

% of Trips - Commercial (by land use)

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Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: P:\CAN0601 Aviano\Background\Aviano(NP_Alt).urb924

Project Name: Aviano Adult Community Project

Project Location: Contra Costa County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

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Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2011 TOTALS (lbs/day unmitigated)	19.82	89.83	160.09	0.17	945.01	4.77	949.29	197.36	4.35	201.30	21,282.68
2012 TOTALS (lbs/day unmitigated)	876.01	39.99	141.57	0.15	0.71	2.24	2.95	0.26	2.02	2.28	17,644.56
2013 TOTALS (lbs/day unmitigated)	7.18	36.05	121.92	0.14	0.66	2.00	2.67	0.24	1.81	2.04	16,618.23

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	55.77	10.26	34.54	0.00	0.10	0.10	12,649.32

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	92.37	112.33	1,162.43	1.23	219.36	41.98	124,434.95

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	148.14	122.59	1,196.97	1.23	219.46	42.08	137,084.27

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Urbemis 2007 Version 9.2.4

Combined Winter Emissions Reports (Pounds/Day)

File Name: P:\CAN0601 Aviano\Background\Aviano(NP_Alt).urb924

Project Name: Aviano Adult Community Project

Project Location: Contra Costa County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

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Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2011 TOTALS (lbs/day unmitigated)	19.82	89.83	160.09	0.17	945.01	4.77	949.29	197.36	4.35	201.30	21,282.68
2012 TOTALS (lbs/day unmitigated)	876.01	39.99	141.57	0.15	0.71	2.24	2.95	0.26	2.02	2.28	17,644.56
2013 TOTALS (lbs/day unmitigated)	7.18	36.05	121.92	0.14	0.66	2.00	2.67	0.24	1.81	2.04	16,618.23

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	164.29	20.61	421.13	1.23	65.79	63.33	27,181.71

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	105.05	166.83	1,240.20	1.07	219.36	41.98	107,550.26

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	269.34	187.44	1,661.33	2.30	285.15	105.31	134,731.97

APPENDIX D-3

GREENHOUSE GAS EMISSIONS WORKSHEET

LSA ASSOCIATES, INC.

Greenhouse Gas Emissions Worksheet

Project Parameters	
	2012
Vehicles (trips/day)	2,975
Electricity used (MWh/year)	6,100
Natural Gas burned (cf/day)	26,000
Solid Waste (tons/year)	976

	Emissions (tons per year)				
Emission Source	**CO_2**	**CH_4**	**N_2O**	**CO_2eq**	
Vehicles	4,345	0.23	0.42	4,500	56%
Electricity Production	1,900	0.02	0.011	1,900	23%
Natural Gas Combustion	1,568	0.011	0.01	1,600	20%
Solid Waste	N/A	N/A	N/A	117	1%
Total Annual Emissions	7,800	0.26	0.44	8,100	100%

Note: Numbers in table may not appear to add up correctly due to rounding of all numbers to two significant digits.

Emission Source	**Total CO_2eq (Tg per year)**
Vehicles	0.0041
Electricity Production	0.0017
Natural Gas Combustion	0.0015
Solid Waste	0.00011
Total (CO_2eq)	0.0074
% of State 2004 total	0.0015%

1.1025 tons/metric tonne
1,000,000 metric tonne/Tg

Comparison Area GHG Usage			Year of data
State	480	Tg/year	2004

Global warming potentials (GWPs) are used to compare the abilities of different GHGs to trap heat in the atmosphere. GWPs are based on the radiative efficiency (heat-absorbing ability) of each gas relative to that of CO_2, as well as the decay rate of each gas (the amount removed from the atmosphere over a given number of years) relative to that of CO_2. The GWP provides a construct for converting emissions of various gases into a common measure, which allows climate analysts to aggregate the radiative impacts of various GHGs into a uniform measure denominated in carbon or CO_2 equivalents. The generally accepted authority on GWPs is the Intergovernmental Panel on Climate Change (IPCC). In 2007, the IPCC updated its estimates of GWPs for key GHGs. The table below lists the GWPs to calculate carbon dioxide equivalents (CO2eq)

Global Warming Potential

Gas	Atmospheric Lifetime (years)	Global Warming Potential (100 year time horizon)
Carbon Dioxide	50-200	1
Methane	12	25
Nitrous Oxide	114	298
HFC-23	270	14800
HFC-134a	14	1430
HFC-152a	1.4	124
PFC: Tetrafluoromethane (CF_4)	50,000	7390
PFC: Hexafluoromethane (C_2F_6)	10,000	12200
Sulfur Hexafluoride (SF_6)	3,200	22800

LSA ASSOCIATES, INC.

Electricity Emissions Worksheet

Commercial Electricity Usage (2003 data):

Commercial Building Type	Electricity Consumption per Building by Building Type (thousand kWH)	Electricity Consumption per Square Foot by Building Type (kWh)	Project Info (either # of bldgs or total sf, not both) # of bldgs	Project Info total sf	Annual Electricity Consumption (MWh)
All Commercial	202	14.1			
Retail (Other than Mall)	139	14.3			
Education	283	11			
Food Sales	276	49.4			
Food Service	213	38.4			
Health Care (All)	564	22.9			
Inpatient Health	6,628	27.5			
Outpatient Health	168	16.1			
Lodging	483	13.5			
Office	256	17.3			
Other	510	22.5			
Public Assembly	179	12.5			
Public Order and Safety	237	15.3			
Religious Worship	49	4.9			
Service	73	11			
Vacant	42	2.4			
Warehouse and Storage	154	7.6			

Note: Health Care (All) includes both "Inpatient Health" and "Outpatient Health".

Source: Energy Information Administration, www.eia.doe.gov/emeu/cbecs/cbecs2003/detailed_tables_2003/detailed_tables_2003.html, Table C14.

Residential Electricity Usage (2001 data):

	Mountain	Pacific	Total US.	Project Info # of units	Annual Consumption MWh
Electricity (kWh)	9,926	7,622	10,656	535	4,078

Source: Energy Information Administration, Office of Energy Markets and End Use, Forms EIA-457 A-G of the 2001 Residential Energy Consumption Survey.

	CO_2			CH_4	N_2O
Electricity production emission factors for	lb/kWh	short tons/MWh	tons/MWh	lb/MWh	lb/MWh
CA	0.61	0.303	0.275	0.0067	0.0037
U.S. Average	1.34	0.668	0.606	0.0111	0.0192

Source: Energy Information Administration, Updated State-and Regional-level Greenhouse Gas Emission Factors for Electricity (March 2002), http://www.eia.doe.gov/pub/oiaf/1605/cdrom/pdf/e-supdoc.pdf. (http://www.eia.doe.gov/oiaf/1605/ee-factors.html accessed 4/14/2008)

Electricity Usage due to Water Consumption:

	kWh/MG	
	Northern California	**Southern California**
Water Supply and Conveyance	150	8,900
Water Treatment	100	100
Water Distribution	1,200	1,200
Wastewater Treatment	2,500	2,500
Totals	*3,950*	*12,700*

From California's Water Energy Relationship, CEC 2005

	Project opening year 2012	
Project Water Supply/Demand[1]	22,380.00	acre-feet/year
Project Wastewater Generation	119.84	acre-feet/year
Project total usage	22,499.84	acre-feet/year
Project Wastewater Generation[2]	107,000	gallons/day
Gallons Per Year	39,055,000	
	325,900	gallons/acre-feet
Project Wastewater Acre-feet Per Year	120	acre-feet/year
Water Supply and Conveyance	75,531.95	kWh/year
Water Treatment	50,354.64	kWh/year
Water Distribution	604,255.63	kWh/year
Wastewater Treatment	1,258,865.90	kWh/year
TOTAL	1,989,008.12	kWh/year

(1) Brown and Caldwell, 2008. *Final Water Supply Assessment for Aviano Adult Community Project.* February.

(2) Baatrup, Greg, 2006. District Engineer/Engineering Services Director, Delta Diablo Sanitation District. Written communication with LSA Associates, Inc. November 29

GHG Emissions Related to Solid Waste Disposal

Single Family Residences	535
Pounds per single-family residence/day[(1)]	10.0
Total Pounds Disposed per Day	5,350
Total Pounds per Year	1,952,750
Total Tons per Year	**976**

CO_2eq Emissions/Ton[(2)]	0.12
CO_2eq Emissions	117.165

(1) Integrated Waste Management Board, 2006. Estimated Solid Waste Generation Rates for Residential Developments. Website: www.ciwmb.ca.gov/WasteChar/WasteGenRates/Residential.htm. October 30.

(2) U.S. Environmental Protection Agency. 2006. *Solid Waste Management and Greenhouse Gases: A Life-Cycle Assessment of Emissions and Sinks*, Exhibit 6-8. September.

APPENDIX E

NOISE DATA

TABLE Existing-01
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 06/19/2008
ROADWAY SEGMENT: Deer Valley Road - Lone Tree Way to Marita Drive
NOTES: - Existing

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 12900 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 66.49

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	91.1	190.9	408.6

TABLE Existing-02
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 06/19/2008
ROADWAY SEGMENT: Deer Valley Road - Marita Drive to Prewett Ranch Drive
NOTES: - Existing

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 12300 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 66.28

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	88.5	185.0	395.9

TABLE Existing-03
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 06/19/2008
ROADWAY SEGMENT: Deer Valley Road - Prewett Ranch Drive to Mammoth Way
NOTES: - Existing

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 10200 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 65.47

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	78.9	163.7	349.6

TABLE Existing-04
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 06/19/2008
ROADWAY SEGMENT: Vista Grande Drive - Lone Tree Way to Hillcrest Avenue
NOTES: - Existing

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 3600 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 60.94

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	84.4	175.9

TABLE Existing-05
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 06/19/2008
ROADWAY SEGMENT: Hillcrest Avenue - Lone Tree Way to Vista Grande Drive
NOTES: - Existing

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 2800 SPEED (MPH): 45 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 59.85

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	72.5	149.3

TABLE Existing-06
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 06/19/2008
ROADWAY SEGMENT: Hillcrest Avenue - Vista Grande Drive to Prewett Ranch Drive
NOTES: - Existing

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 3000 SPEED (MPH): 45 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 60.15

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	75.5	156.2

TABLE Existing-07
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 06/19/2008
ROADWAY SEGMENT: Hillcrest Avenue - Prewett Ranch Drive to East Entrance
NOTES: - Existing

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 0 SPEED (MPH): 45 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 25.38

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	0.0

TABLE Existing-08
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 06/19/2008
ROADWAY SEGMENT: Hillcrest Avenue - East Entrance to Sand Creek Road
NOTES: - Existing

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 0 SPEED (MPH): 45 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 25.38

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	0.0

TABLE Existing-09
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 06/19/2008
ROADWAY SEGMENT: Sand Creek Road - Hillcrest Avenue to South Entrance
NOTES: - Existing

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 0 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 25.38

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	0.0

TABLE Existing-10
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 06/19/2008
ROADWAY SEGMENT: Sand Creek Road - South Entrance to Future school access road
NOTES: - Existing

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 0 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 25.38

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	0.0

TABLE Near Term (2011)-01
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 06/19/2008
ROADWAY SEGMENT: Deer Valley Road - Lone Tree Way to Marita Drive
NOTES: - Near Term (2011)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 17600 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 67.84

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
55.6	110.8	234.1	502.3

TABLE Near Term (2011)-02
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 06/19/2008
ROADWAY SEGMENT: Deer Valley Road - Marita Drive to Prewett Ranch Drive
NOTES: - Near Term (2011)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 17000 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 67.69

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	108.4	228.9	490.9

TABLE Near Term (2011)-03
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 06/19/2008
ROADWAY SEGMENT: Deer Valley Road - Prewett Ranch Drive to Mammoth Way
NOTES: - Near Term (2011)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 16500 SPEED (MPH): 45 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 67.56

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	106.3	224.4	481.3

TABLE Near Term (2011)-04
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 06/19/2008
ROADWAY SEGMENT: Vista Grande Drive - Lone Tree Way to Hillcrest Avenue
NOTES: - Near Term (2011)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 4300 SPEED (MPH): 45 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 61.72

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	94.2	197.6

TABLE Near Term (2011)-05
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 06/19/2008
ROADWAY SEGMENT: Hillcrest Avenue - Lone Tree Way to Vista Grande Drive
NOTES: - Near Term (2011)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 5200 SPEED (MPH): 45 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 62.54

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	106.1	223.9

TABLE Near Term (2011)-06
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 06/19/2008
ROADWAY SEGMENT: Hillcrest Avenue - Vista Grande Drive to Prewett Ranch Drive
NOTES: - Near Term (2011)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 5300 SPEED (MPH): 45 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 62.62

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	107.4	226.8

TABLE Near Term (2011)-07
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 06/19/2008
ROADWAY SEGMENT: Hillcrest Avenue - Prewett Ranch Drive to East Entrance
NOTES: - Near Term (2011)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 2400 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 59.18

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	66.2	135.1

TABLE Near Term (2011)-08
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 06/19/2008
ROADWAY SEGMENT: Hillcrest Avenue - East Entrance to Sand Creek Road
NOTES: - Near Term (2011)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 1700 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 57.69

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	108.4

TABLE Near Term (2011)-09
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 06/19/2008
ROADWAY SEGMENT: Sand Creek Road - Hillcrest Avenue to South Entrance
NOTES: - Near Term (2011)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 1600 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 57.42

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	104.3

TABLE Near Term (2011)-10
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 06/19/2008
ROADWAY SEGMENT: Sand Creek Road - South Entrance to Future school access road
NOTES: - Near Term (2011)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 1600 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 57.42

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	104.3

TABLE Near Term + Project-01
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 06/19/2008
ROADWAY SEGMENT: Deer Valley Road - Lone Tree Way to Marita Drive
NOTES: - Near Term + Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 17600 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 67.84

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
55.6	110.8	234.1	502.3

TABLE Near Term + Project-02
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 06/19/2008
ROADWAY SEGMENT: Deer Valley Road - Marita Drive to Prewett Ranch Drive
NOTES: - Near Term + Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 17100 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 67.71

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	108.8	229.8	492.8

TABLE Near Term + Project-03
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 06/19/2008
ROADWAY SEGMENT: Deer Valley Road - Prewett Ranch Drive to Mammoth Way
NOTES: - Near Term + Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 16600 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 67.58

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	106.7	225.3	483.2

TABLE Near Term + Project-04
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 06/19/2008
ROADWAY SEGMENT: Vista Grande Drive - Lone Tree Way to Hillcrest Avenue
NOTES: - Near Term + Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 4300 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 61.72

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	94.2	197.6

TABLE Near Term + Project-05
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 06/19/2008
ROADWAY SEGMENT: Hillcrest Avenue - Lone Tree Way to Vista Grande Drive
NOTES: - Near Term + Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 7000 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 63.83

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL	70 CNEL	65 CNEL	60 CNEL	55 CNEL
	0.0	63.2	128.3	272.4

TABLE Near Term + Project-06
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 06/19/2008
ROADWAY SEGMENT: Hillcrest Avenue - Vista Grande Drive to Prewett Ranch Drive
NOTES: - Near Term + Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 7100 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 63.89

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL	70 CNEL	65 CNEL	60 CNEL	55 CNEL
	0.0	63.7	129.4	275.0

TABLE Near Term + Project-07
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 06/19/2008
ROADWAY SEGMENT: Hillcrest Avenue - Prewett Ranch Drive to East Entrance
NOTES: - Near Term + Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 4200 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 61.61

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL	70 CNEL	65 CNEL	60 CNEL	55 CNEL
	0.0	0.0	92.8	194.6

TABLE Near Term + Project-08
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 06/19/2008
ROADWAY SEGMENT: Hillcrest Avenue - East Entrance to Sand Creek Road
NOTES: - Near Term + Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 1900 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 58.17

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL	70 CNEL	65 CNEL	60 CNEL	55 CNEL
	0.0	0.0	58.0	116.3

TABLE Near Term + Project-09
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 06/19/2008
ROADWAY SEGMENT: Sand Creek Road - Hillcrest Avenue to South Entrance
NOTES: - Near Term + Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 1900 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 58.17

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	58.0	116.3

TABLE Near Term + Project-10
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 06/19/2008
ROADWAY SEGMENT: Sand Creek Road - South Entrance to Future school access road
NOTES: - Near Term + Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 1600 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 57.42

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	104.3

TABLE Cumulative (2025)-01
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 06/19/2008
ROADWAY SEGMENT: Deer Valley Road - Lone Tree Way to Marita Drive
NOTES: - Cumulative (2025)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 17400 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 67.79

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	110.0	232.4	498.6

TABLE Cumulative (2025)-02
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 06/19/2008
ROADWAY SEGMENT: Deer Valley Road - Marita Drive to Prewett Ranch Drive
NOTES: - Cumulative (2025)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 16700 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 67.61

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	107.2	226.2	485.1

TABLE Cumulative (2025)-03
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 06/19/2008
ROADWAY SEGMENT: Deer Valley Road - Prewett Ranch Drive to Mammoth Way
NOTES: - Cumulative (2025)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 21700 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.75

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
62.5	126.6	268.9	577.4

TABLE Cumulative (2025)-04
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 06/19/2008
ROADWAY SEGMENT: Vista Grande Drive - Lone Tree Way to Hillcrest Avenue
NOTES: - Cumulative (2025)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 5300 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 62.62

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	107.4	226.8

TABLE Cumulative (2025)-05
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 06/19/2008
ROADWAY SEGMENT: Hillcrest Avenue - Lone Tree Way to Vista Grande Drive
NOTES: - Cumulative (2025)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 23200 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.04

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
64.9	132.2	281.0	603.6

TABLE Cumulative (2025)-06
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 06/19/2008
ROADWAY SEGMENT: Hillcrest Avenue - Vista Grande Drive to Prewett Ranch Drive
NOTES: - Cumulative (2025)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 25100 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.38

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
68.0	139.1	296.1	636.1

TABLE Cumulative (2025)-07
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 06/19/2008
ROADWAY SEGMENT: Hillcrest Avenue - Prewett Ranch Drive to East Entrance
NOTES: - Cumulative (2025)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 23800 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.15

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
65.9	134.4	285.8	614.0

TABLE Cumulative (2025)-08
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 06/19/2008
ROADWAY SEGMENT: Hillcrest Avenue - East Entrance to Sand Creek Road
NOTES: - Cumulative (2025)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 20900 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.58

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
61.2	123.6	262.3	563.1

TABLE Cumulative (2025)-09
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 06/19/2008
ROADWAY SEGMENT: Sand Creek Road - Hillcrest Avenue to South Entrance
NOTES: - Cumulative (2025)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 20000 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.39

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
59.7	120.2	254.8	546.8

TABLE Cumulative (2025)-10
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 06/19/2008
ROADWAY SEGMENT: Sand Creek Road - South Entrance to Future school access road
NOTES: - Cumulative (2025)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 20000 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.39

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
59.7	120.2	254.8	546.8

TABLE Cumulative + Project-01
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 06/19/2008
ROADWAY SEGMENT: Deer Valley Road - Lone Tree Way to Marita Drive
NOTES: - Cumulative + Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 17400 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 67.79

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	110.0	232.4	498.6

TABLE Cumulative + Project-02
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 06/19/2008
ROADWAY SEGMENT: Deer Valley Road - Marita Drive to Prewett Ranch Drive
NOTES: - Cumulative + Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 16700 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 67.61

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	107.2	226.2	485.1

TABLE Cumulative + Project-03
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 06/19/2008
ROADWAY SEGMENT: Deer Valley Road - Prewett Ranch Drive to Mammoth Way
NOTES: - Cumulative + Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 21700 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.75

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
62.5	126.6	268.9	577.4

TABLE Cumulative + Project-04
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 06/19/2008
ROADWAY SEGMENT: Vista Grande Drive - Lone Tree Way to Hillcrest Avenue
NOTES: - Cumulative + Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 5300 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 62.62

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	107.4	226.8

TABLE Cumulative + Project-05
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 06/19/2008
ROADWAY SEGMENT: Hillcrest Avenue - Lone Tree Way to Vista Grande Drive
NOTES: - Cumulative + Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 23700 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.13

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
65.7	134.0	285.0	612.2

TABLE Cumulative + Project-06
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 06/19/2008
ROADWAY SEGMENT: Hillcrest Avenue - Vista Grande Drive to Prewett Ranch Drive
NOTES: - Cumulative + Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 25900 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.51

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
69.2	141.9	302.3	649.5

TABLE Cumulative + Project-07
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 06/19/2008
ROADWAY SEGMENT: Hillcrest Avenue - Prewett Ranch Drive to East Entrance
NOTES: - Cumulative + Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 24600 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.29

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
67.2	137.3	292.2	627.6

TABLE Cumulative + Project-08
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 06/19/2008
ROADWAY SEGMENT: Hillcrest Avenue - East Entrance to Sand Creek Road
NOTES: - Cumulative + Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 21100 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.62

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
61.5	124.4	263.9	566.7

TABLE Cumulative + Project-09
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 06/19/2008
ROADWAY SEGMENT: Sand Creek Road - Hillcrest Avenue to South Entrance
NOTES: - Cumulative + Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 20200 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.43

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
60.0	120.9	256.4	550.5

TABLE Cumulative + Project-10
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 06/19/2008
ROADWAY SEGMENT: Sand Creek Road - South Entrance to Future school access road
NOTES: - Cumulative + Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 20300 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.46

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
60.2	121.3	257.3	552.3

TABLE Cumulative PP with 6 ft barrier-01
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 06/19/2008
ROADWAY SEGMENT: Hillcrest Avenue - Prewett Ranch Drive to East Entrance
NOTES: Aviano project Barrier run - Cumulative PP with 6 ft barrier

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 24600 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

ELEVATION AT ROAD SURFACE: 0
ELEVATION AT BARRIER BASE: 0
BARRIER HEIGHT (FT): 6
BARRIER TYPE: WALL
ELEVATION AT RECEPTOR BASE: 0
RECEPTOR HEIGHT (FT): 5

ROADWAY CENTERLINE TO RECEPTOR DISTANCE (FT): 74
BARRIER TO RECEPTOR DISTANCE (FT): 32

* * CALCULATED NOISE LEVELS * *

CNEL WITHOUT BARRIER (dB)= 69.29

BARRIER ATTENUATION (dB):
Autos: -7.48
Med. Trucks: -6.36
Hvy. Trucks: -5.00

CNEL WITH BARRIER (dB)= 62.54

TABLE Cumulative PP with 6 ft barrier-02
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 06/19/2008
ROADWAY SEGMENT: Hillcrest Avenue - East Entrance to Sand Creek Road
NOTES: Aviano project Barrier run - Cumulative PP with 6 ft barrier

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 21100 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

ELEVATION AT ROAD SURFACE: 0
ELEVATION AT BARRIER BASE: 0
BARRIER HEIGHT (FT): 6
BARRIER TYPE: WALL
ELEVATION AT RECEPTOR BASE: 0
RECEPTOR HEIGHT (FT): 5

ROADWAY CENTERLINE TO RECEPTOR DISTANCE (FT): 74
BARRIER TO RECEPTOR DISTANCE (FT): 32

* * CALCULATED NOISE LEVELS * *

CNEL WITHOUT BARRIER (dB)= 68.62

BARRIER ATTENUATION (dB):
Autos: -7.48
Med. Trucks: -6.36
Hvy. Trucks: -5.00

CNEL WITH BARRIER (dB)= 61.88

TABLE Cumulative PP with 6 ft barrier-03
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 06/19/2008
ROADWAY SEGMENT: Sand Creek Road - Hillcrest Avenue to South Entrance
NOTES: Aviano project Barrier run - Cumulative PP with 6 ft barrier

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 20200 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

ELEVATION AT ROAD SURFACE: 0
ELEVATION AT BARRIER BASE: 0
BARRIER HEIGHT (FT): 6
BARRIER TYPE: WALL
ELEVATION AT RECEPTOR BASE: 0
RECEPTOR HEIGHT (FT): 5

ROADWAY CENTERLINE TO RECEPTOR DISTANCE (FT): 74
BARRIER TO RECEPTOR DISTANCE (FT): 32

* * CALCULATED NOISE LEVELS * *

CNEL WITHOUT BARRIER (dB)= 68.43

BARRIER ATTENUATION (dB):
Autos: -7.48
Med. Trucks: -6.36
Hvy. Trucks: -5.00

CNEL WITH BARRIER (dB)= 61.69

TABLE Cumulative PP with 6 ft barrier-04
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 06/19/2008
ROADWAY SEGMENT: Sand Creek Road - South Entrance to Future school access road
NOTES: Aviano project Barrier run - Cumulative PP with 6 ft barrier

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 20300 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

ELEVATION AT ROAD SURFACE: 0
ELEVATION AT BARRIER BASE: 0
BARRIER HEIGHT (FT): 6
BARRIER TYPE: WALL
ELEVATION AT RECEPTOR BASE: 0
RECEPTOR HEIGHT (FT): 5

ROADWAY CENTERLINE TO RECEPTOR DISTANCE (FT): 74
BARRIER TO RECEPTOR DISTANCE (FT): 32

* * CALCULATED NOISE LEVELS * *

CNEL WITHOUT BARRIER (dB)= 68.46

BARRIER ATTENUATION (dB):
Autos: -7.48
Med. Trucks: -6.36
Hvy. Trucks: -5.00

CNEL WITH BARRIER (dB)= 61.71

TABLE Cumulative PP with 8 ft barrier-01
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 06/19/2008
ROADWAY SEGMENT: Hillcrest Avenue - Prewett Ranch Drive to East Entrance
NOTES: Aviano project Barrier run - Cumulative PP with 8 ft barrier

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 24600 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

ELEVATION AT ROAD SURFACE: 0
ELEVATION AT BARRIER BASE: 0
BARRIER HEIGHT (FT): 8
BARRIER TYPE: WALL
ELEVATION AT RECEPTOR BASE: 0
RECEPTOR HEIGHT (FT): 5

ROADWAY CENTERLINE TO RECEPTOR DISTANCE (FT): 74
BARRIER TO RECEPTOR DISTANCE (FT): 32

* * CALCULATED NOISE LEVELS * *

CNEL WITHOUT BARRIER (dB)= 69.29

BARRIER ATTENUATION (dB):
Autos: -9.60
Med. Trucks: -8.53
Hvy. Trucks: -5.78

CNEL WITH BARRIER (dB)= 60.83

TABLE Cumulative PP with 8 ft barrier-02
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 06/19/2008
ROADWAY SEGMENT: Hillcrest Avenue - East Entrance to Sand Creek Road
NOTES: Aviano project Barrier run - Cumulative PP with 8 ft barrier

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 21100 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

ELEVATION AT ROAD SURFACE: 0
ELEVATION AT BARRIER BASE: 0
BARRIER HEIGHT (FT): 8
BARRIER TYPE: WALL
ELEVATION AT RECEPTOR BASE: 0
RECEPTOR HEIGHT (FT): 5

ROADWAY CENTERLINE TO RECEPTOR DISTANCE (FT): 74
BARRIER TO RECEPTOR DISTANCE (FT): 32

* * CALCULATED NOISE LEVELS * *

CNEL WITHOUT BARRIER (dB)= 68.62

BARRIER ATTENUATION (dB):
Autos: -9.60
Med. Trucks: -8.53
Hvy. Trucks: -5.78

CNEL WITH BARRIER (dB)= 60.16

TABLE Cumulative PP with 8 ft barrier-03
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 06/19/2008
ROADWAY SEGMENT: Sand Creek Road - Hillcrest Avenue to South Entrance
NOTES: Aviano project Barrier run - Cumulative PP with 8 ft barrier

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 20200 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

ELEVATION AT ROAD SURFACE: 0
ELEVATION AT BARRIER BASE: 0
BARRIER HEIGHT (FT): 8
BARRIER TYPE: WALL
ELEVATION AT RECEPTOR BASE: 0
RECEPTOR HEIGHT (FT): 5

ROADWAY CENTERLINE TO RECEPTOR DISTANCE (FT): 74
BARRIER TO RECEPTOR DISTANCE (FT): 32

* * CALCULATED NOISE LEVELS * *

CNEL WITHOUT BARRIER (dB)= 68.43

BARRIER ATTENUATION (dB):
Autos: -9.60
Med. Trucks: -8.53
Hvy. Trucks: -5.78

CNEL WITH BARRIER (dB)= 59.97

TABLE Cumulative PP with 8 ft barrier-04
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 06/19/2008
ROADWAY SEGMENT: Sand Creek Road - South Entrance to Future school access road
NOTES: Aviano project Barrier run - Cumulative PP with 8 ft barrier

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 20300 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

ELEVATION AT ROAD SURFACE: 0
ELEVATION AT BARRIER BASE: 0
BARRIER HEIGHT (FT): 8
BARRIER TYPE: WALL
ELEVATION AT RECEPTOR BASE: 0
RECEPTOR HEIGHT (FT): 5

ROADWAY CENTERLINE TO RECEPTOR DISTANCE (FT): 74
BARRIER TO RECEPTOR DISTANCE (FT): 32

* * CALCULATED NOISE LEVELS * *

CNEL WITHOUT BARRIER (dB)= 68.46

BARRIER ATTENUATION (dB):
Autos: -9.60
Med. Trucks: -8.53
Hvy. Trucks: -5.78

CNEL WITH BARRIER (dB)= 59.99

TABLE Cumulative PP with 10 ft barrier-01
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 06/19/2008
ROADWAY SEGMENT: Hillcrest Avenue - Prewett Ranch Drive to East Entrance
NOTES: Aviano project Barrier run - Cumulative PP with 10 ft barrier

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 24600 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

ELEVATION AT ROAD SURFACE: 0
ELEVATION AT BARRIER BASE: 0
BARRIER HEIGHT (FT): 10
BARRIER TYPE: WALL
ELEVATION AT RECEPTOR BASE: 0
RECEPTOR HEIGHT (FT): 5

ROADWAY CENTERLINE TO RECEPTOR DISTANCE (FT): 74
BARRIER TO RECEPTOR DISTANCE (FT): 32

* * CALCULATED NOISE LEVELS * *

CNEL WITHOUT BARRIER (dB)= 69.29

BARRIER ATTENUATION (dB):
Autos: -11.37
Med. Trucks: -10.50
Hvy. Trucks: -7.86

CNEL WITH BARRIER (dB)= 58.92

TABLE Cumulative PP with 10 ft barrier-02
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 06/19/2008
ROADWAY SEGMENT: Hillcrest Avenue - East Entrance to Sand Creek Road
NOTES: Aviano project Barrier run - Cumulative PP with 10 ft barrier

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 21100 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

ELEVATION AT ROAD SURFACE: 0
ELEVATION AT BARRIER BASE: 0
BARRIER HEIGHT (FT): 10
BARRIER TYPE: WALL
ELEVATION AT RECEPTOR BASE: 0
RECEPTOR HEIGHT (FT): 5

ROADWAY CENTERLINE TO RECEPTOR DISTANCE (FT): 74
BARRIER TO RECEPTOR DISTANCE (FT): 32

* * CALCULATED NOISE LEVELS * *

CNEL WITHOUT BARRIER (dB)= 68.62

BARRIER ATTENUATION (dB):
Autos: -11.37
Med. Trucks: -10.50
Hvy. Trucks: -7.86

CNEL WITH BARRIER (dB)= 58.26

TABLE Cumulative PP with 10 ft barrier-03
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 06/19/2008
ROADWAY SEGMENT: Sand Creek Road - Hillcrest Avenue to South Entrance
NOTES: Aviano project Barrier run - Cumulative PP with 10 ft barrier

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 20200 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

ELEVATION AT ROAD SURFACE: 0
ELEVATION AT BARRIER BASE: 0
BARRIER HEIGHT (FT): 10
BARRIER TYPE: WALL
ELEVATION AT RECEPTOR BASE: 0
RECEPTOR HEIGHT (FT): 5

ROADWAY CENTERLINE TO RECEPTOR DISTANCE (FT): 74
BARRIER TO RECEPTOR DISTANCE (FT): 32

* * CALCULATED NOISE LEVELS * *

CNEL WITHOUT BARRIER (dB)= 68.43

BARRIER ATTENUATION (dB):
Autos: -11.37
Med. Trucks: -10.50
Hvy. Trucks: -7.86

CNEL WITH BARRIER (dB)= 58.07

TABLE Cumulative PP with 10 ft barrier-04
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 06/19/2008
ROADWAY SEGMENT: Sand Creek Road - South Entrance to Future school access road
NOTES: Aviano project Barrier run - Cumulative PP with 10 ft barrier

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 20300 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

ELEVATION AT ROAD SURFACE: 0
ELEVATION AT BARRIER BASE: 0
BARRIER HEIGHT (FT): 10
BARRIER TYPE: WALL
ELEVATION AT RECEPTOR BASE: 0
RECEPTOR HEIGHT (FT): 5

ROADWAY CENTERLINE TO RECEPTOR DISTANCE (FT): 74
BARRIER TO RECEPTOR DISTANCE (FT): 32

* * CALCULATED NOISE LEVELS * *

CNEL WITHOUT BARRIER (dB)= 68.46

BARRIER ATTENUATION (dB):
Autos: -11.37
Med. Trucks: -10.50
Hvy. Trucks: -7.86

CNEL WITH BARRIER (dB)= 58.09

APPENDIX F

CALIFORNIA DEPARTMENT OF PARKS AND RECREATION CONTINUATION SHEET FOR CA-CCO-6 82H

William Self Associates archaeologist, Angela Cook revisited site CA-CCO-682H on June 3, 2008 as part of the Aviano Adult Community Project under contract with LSA (Photo 1).

The condition of previously recorded features is as follows:

Feature 1 – earthen loading ramp: condition is as previously described.
Feature 2 – metal water tank: condition is as previously described.
Feature 3 – possible foundation: condition appears to be as previously described, but the mortar and brick fragments were not visible due to heavy vegetation cover.
Feature 4 – circular cistern: condition is as previously described. A wood post has been laid across the opening.
Feature 5 – enclosure with brick-lined well: condition is as described in the 2006 update.
Steel tank: condition is as previously described.
Pile of boards and barbed wire: condition is as previously described.
Wood posts southwest of Feature 5: condition is as previously described.

New GPS coordinates for the site datum are 609671E, 4200612N (NAD 83).

Additional historical research was undertaken to evaluate the site's potential eligibility for inclusion in the California Register of Historic Resources. The Honorable Andrew G. Darby purchased the land in 1869. Darby was born in 1808 in North Carolina. He lived the first half of his life in Tennessee and Missouri, where he served in the military as Captain, Quartermaster, and finally, Colonel. He was also a member of the House of Representatives in the Legislature of Missouri. He moved to California in 1856 and settled in Solano County to farm. In 1869, he relocated to Contra Costa County where he settled on 320 acres in Lone Tree valley, encompassing the eastern half of Section 9, Township 1 North, Range 2 East. Growing grain was his main business, and he also grew fruit, nut and forest trees (Munro-Fraser 1882:546-547). In 1883, he was assessed for $900 worth of improvements on his land, suggesting that the structure visible on the 1898 USGS topographic quadrangle had been built by that time. He was also assessed for 2 wagons, 14 horses, 4 cows, an undisclosed number of hogs and poultry, 1 watch, $190 worth of farming and ranch equipment, and 140 almond trees (Contra Costa County 1883). An illustration of the Darby ranch, reproduced in 1879, shows six structures including the main residence, three possible barns, a possible shed, and what may be the privy. Rows of fruit trees, grain in the process of being harvested, and cows, horses and hogs surround the buildings (Figure 1) (Smith & Elliott 1879:38a).

Darby was a member of the Antioch division of the National Grange of the Order of Patrons of Husbandry, and his eldest son, James, served as the secretary. The Grange was formed in 1867 to represent the interests of farmers, and allowed members of both sexes to join (Carr 1875:105, 108). Subordinate Granges represented local communities. The Antioch Grange was instituted in December 1873. By 1875, 22,000 Subordinate Granges had been established throughout the United States, 250 of these in California (Carr 1875:119-120; Munro-Fraser 1882:489). A. G. Darby passed away in 1891, and his land and assets were distributed between his heirs. An appraisal of his estate included a mortgage against J.D. Darby (one of Andrew's sons) on this land, which was valued at $1000 (Contra Costa County 1901).

The Darby ranch was subsequently purchased by Henry Heidorn and farmed until his retirement in 1904. Henry Heidorn resided at a home north of Lone Tree Way and east of Hillcrest, while his daughter Louisa, her husband Charles Thomas Shellenberger, and their four children Frank, Charles, Emma and Henry, lived at the Darby ranch after 1908. Shellenberger had been a rancher in Contra Costa County for several years and was described as occupying a "prominent place among the representative and highly esteemed men of that locality" (Hulaniski 1917:537, 538). Once Charles became ill ca. 1930s, he and Louisa moved to Brentwood (East Contra Costa Historical Society & Museum n.d.:7-8). According to research conducted by Basin Research Associates and provided in the 2006 update form for this site, the Heidorn family lived at this location in a two-room wooden shack that contained a stove. Walnut, almond and fruit trees were grown on the site. The Gas Plant Manager of the nearby gas fields lived in the shack after the Heidorn family vacated the premises. The shack was either burnt down or demolished ca. 1955-1956. The Darby residence illustrated in the aforementioned Smith & Elliott book is larger than a two-room structure, and it may be that the illustrated structures had been removed by the time the Heidorn family purchased the property.

Assessment of Significance Based on the California Register of Historic Resources Criteria

Criterion 1: It is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
Considering Darby's involvement in the Antioch Grange, it is likely that he was heavily invested in the wheat industry. While the wheat industry has played an important role in the development of eastern Contra Costa County, influencing the location of townships and transportation routes, Darby does not have an important association with this historical trend. He is one of many other farmers who cultivated wheat throughout the vicinity. While members of the Heidorn family do have an important association with the early development of the wheat industry in Contra Costa County, Louisa (nee Heidorn) and her husband, Charles Thomas Shellenberger, do not have an important association with this historical trend. Although of good standing within the community, Shellenberger is one of many other wheat farmers in the region. Site CA-CCO-682H does not appear eligible for the CRHR under criterion 1.

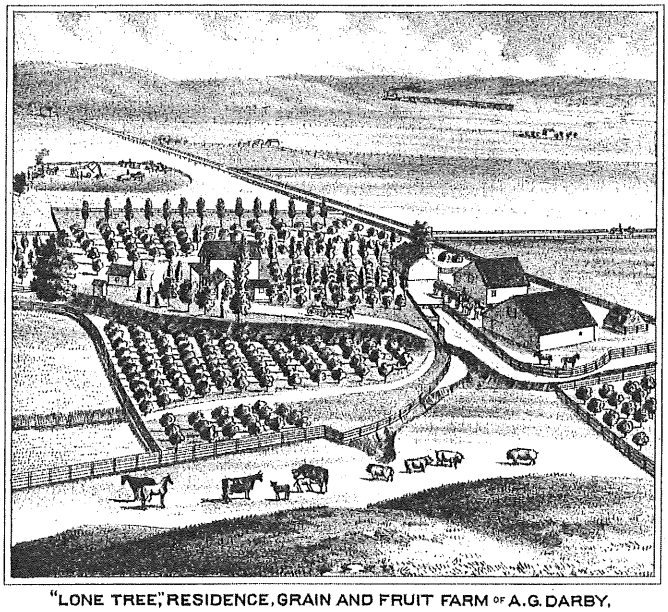
Criterion 2: It is associated with the lives of persons important to California's past.
The property was owned and farmed by A. G. Darby. While Henry Heidorn owned the property after Darby, his son-in-law, Shellenberger, resided at that address. While Darby and Shellenberger were active members of the local community, they are not considered to be persons significant in California or US history. Site CA-CCO-682H does not appear eligible to the CRHR under criterion 2.

Criterion 3: It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.
The site does not embody the distinctive characteristics of a type, period, or method of construction; represent the work of a master; possess high artistic value; or represent a significant and distinguishable entity whose components may lack individual distinction. Site CA-CCO-682H does not appear eligible to the CRHR under criterion 3.

Criterion 4: It has yielded or is likely to yield information important in prehistory or history.
As this site was occupied as a residence and working ranch in the mid- to late-1800s, and there does not appear to be major subsurface disturbance to the site, there is a high potential for intact subsurface historic deposits that may provide information important to the early history of the local area, relating particularly to the early wheat growing period. Diagnostic artifacts would provide dates for features, allowing the archaeological remains to be attributed to specific families who occupied the site at different times. As a result, CA-CCO-682H appears potentially eligible to the CRHR under criterion 4.



Photo 1. Overview of site CA-CCO-682H, facing east. Taken 6/3/08.



"LONE TREE," RESIDENCE, GRAIN AND FRUIT FARM OF A.G. DARBY,
LONE TREE VALLEY, CONTRA COSTA CO. CAL.

Figure 1. Illustration of A.G. Darby's ranch reproduced in Smith & Elliott 1879.

References:

Carr, Ezra S.
1875 *The Patrons of Husbandry of the Pacific Coast.* A.L. Bancroft and Company, San Francisco, CA.

Contra Costa County
1883 Entry for A. G. Darby, Assessment List, County of Contra Costa, 1883. On file at the Contra Costa County Historical Society, Martinez, CA.
1901 Inventory & Appraisement. No 2018 in the Superior Court of Contra Costa County, State of California, in the Matter of the Estate of A.G. Darby, filed May 4, 1891. On file at the Contra Costa County Historical Society, Martinez, CA.

East Contra Costa Historical Society & Museum
n.d. From the Pioneer Family File the Heidorn-Brockhoff Families. On file at the Contra Costa County Historical Society, Martinez, CA.

Hulaniski, F. J. (ed.)
1917 *The History of Contra Costa County, California.* The Elms Publishing Co., Inc., Berkeley, CA.

Munro-Fraser, J. P.
1882 *History of Contra Costa County, California.* W.A. Slocum & Co., San Francisco, CA. Reprinted in 2000 by Contra Costa County Historical Society, Martinez, CA.

Smith & Elliott
1879 *Illustrations of Contra Costa Co. California, with Historical Sketch.* Smith & Elliott, Oakland, CA. Reprinted in 1979 by Valley Publishers, Fresno, CA.

APPENDIX G

GEOLOGIC/GEOTECHNICAL FEASIBILITY INVESTIGATION

BGC

BERLOGAR
GEOTECHNICAL
CONSULTANTS

SOIL ENGINEERS
ENGINEERING GEOLOGISTS

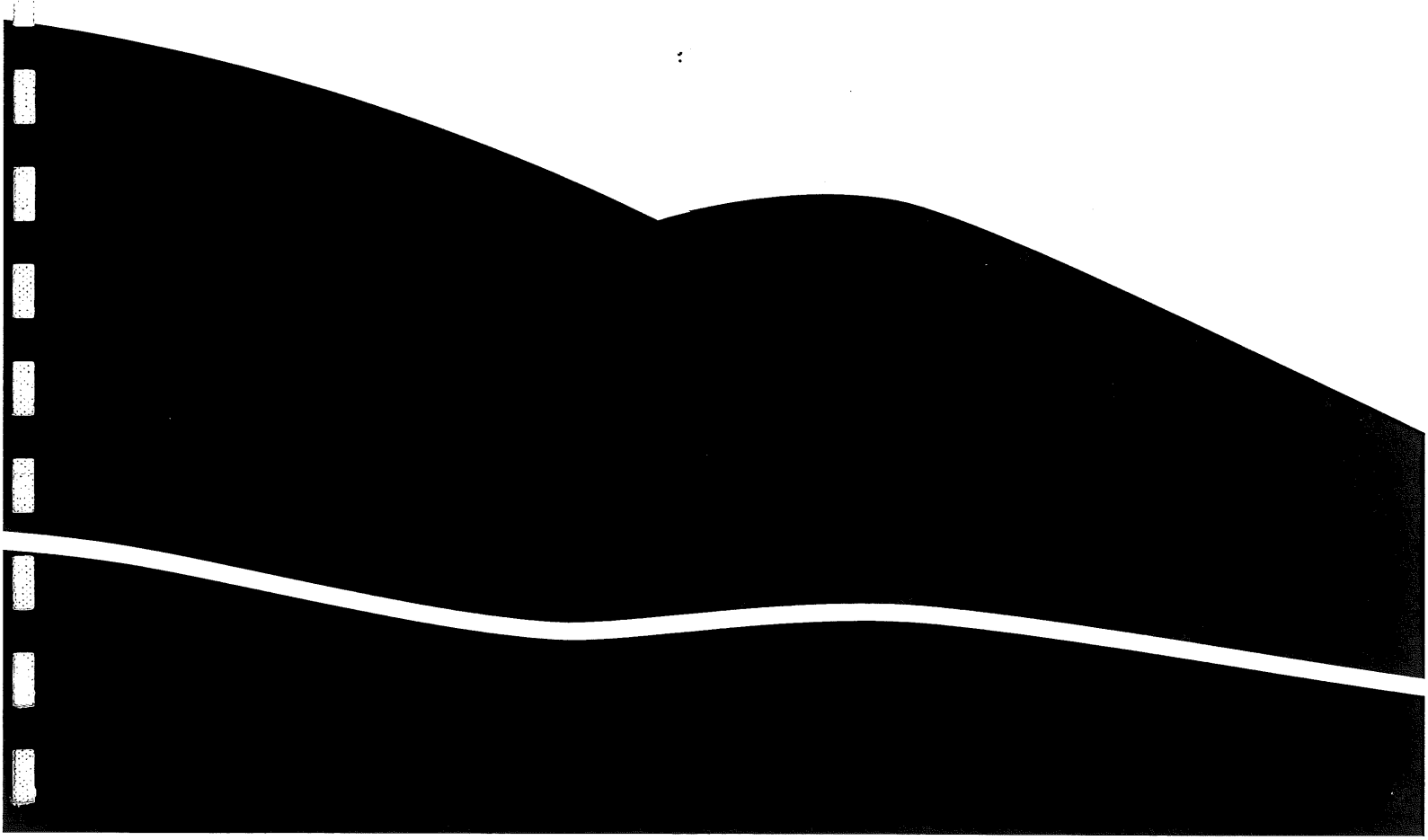
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REVISED REPORT
GEOLOGIC/GEOTECHNICAL
FEASIBILITY INVESTIGATION
WILLIAMSON PROPERTY
HILLCREST AVENUE
ANTIOCH, CALIFORNIA

FOR
PULTE HOME CORPORATION
June 5, 2006



June 5, 2006
Job No. 2793.100

BGC
BERLOGAR
GEOTECHNICAL
CONSULTANTS

Mr. Dennis O'Keefe
Pulte Home Corporation
6210 Stoneridge Mall Road, 5th Floor
Pleasanton, California 94588

Subject: Revised Report
Geologic/Geotechnical Feasibility Investigation
Williamson Property
Hillcrest Avenue
Antioch, California

Dear Mr. O'Keefe:

INTRODUCTION

This report presents the results of our geologic/geotechnical feasibility investigation for the proposed residential development on the Williamson property, off Hillcrest Avenue in Antioch, California. The site is shown in relation to the city of Antioch on the Vicinity Map, Plate 1.

A land plan for the project dated June 1, 2006, prepared by Carlson, Barbee and Gibson, Inc., shows 562 single-family residential lots on the northern two-thirds (roughly) of the site. Sand Creek Road will be a new roadway traversing the property east-west and forming the southern boundary of the development. No development is proposed in the southern part of the property south of proposed Sand Creek Road. Exploration was performed in, and information is presented for, the southern portion of the site, for an earlier land plan that included improvements there. This information is retained in this report merely for the sake of completeness.

PURPOSE AND SCOPE OF SERVICES

The purpose of this geologic/geotechnical feasibility investigation was to address geologic and geotechnical aspects that will have primary cost impacts on the proposed residential development at this site.

Our scope of services included a review of the available data pertinent to the site, inquiry to the City of Antioch about the Antioch fault issue, study of aerial photographs, field exploration, laboratory testing, preliminary engineering analyses and preparation of this report.

FIELD EXPLORATION AND LABORATORY TESTING

Our field exploration was performed on November 9, 2004, and consisted of drilling five borings and excavating ten test pits at the approximate locations shown on the Site Plan, Plate 2. The borings were drilled using either solid flight auger or hollow-stem auger to depths ranging from about 25 to 44½ feet. The test pits were dug with a rubber-tire backhoe to depths ranging from about 5 to 15 feet. The borings were backfilled with neat cement grout after drilling and sampling. The test pits were backfilled with excavated soils with minimum compactive effort.

The materials encountered in the borings and test pits were visually classified in the field and logs were recorded. The boring logs showing soil classifications and blow counts are presented on Plates 3 through 13. A Key to Boring Log Symbols is shown on Plate 14. The logs of test pits are presented on Plates 15 through 17.

Laboratory testing included moisture content, dry density, Atterberg limits, gradation and unconfined compression tests on selected samples from the borings. The results of the moisture content and dry densities are presented on the boring logs. The remaining test results are presented on Plates 18 through 20.

SEISMICITY

The site is situated in the Coast Range geomorphic province of California and is seismically dominated by the presence of the active San Andreas fault system. The San Andreas fault system is the general boundary between the northward moving Pacific Plate and southward moving North American Plate. In the San Francisco Bay Area, relative plate movement is distributed across a complex system of generally strike-slip, right-lateral parallel and subparallel faults, which include the San Andreas, Hayward and Calaveras faults, among others.

Active faults in the region include the Mt. Diablo thrust fault, located under the area (distance 0 km). This fault does not reach up to the ground surface, so it does not pose a known hazard of surface fault rupture; however, it is a known source of seismic risk. Other faults include the Great Valley 5 fault 3½ miles to the northeast, the Greenville fault 6 miles to the southwest, and the Concord-Green Valley fault 12 miles to the southwest. The San Andreas fault, the Hayward fault, and the Calaveras fault are located 44, 25, and 16 miles to the southwest, respectively.

SITE CONDITIONS

SURFACE CONDITIONS

The site is currently undeveloped pastureland that is bound to the north by residential development and to the south, east, and west by open pastureland. The majority of the site is relatively flat and descends gently from about Elevation 200 feet mean sea level (MSL) in the western portion of the site to about Elevation 171 feet MSL in the eastern portion of the site. Sand Creek flows towards the northeast and is incised about 20 feet deep where it crosses the southern portion of the site. A north facing hill slope is located in the southernmost portion of the site, south of Sand Creek. The hill slopes up at gradients ranging from about 1½ horizontal to 1 vertical (1½ H:1V) to 3H:1V. The top of the hill is located at an elevation of about 328 feet above MSL at the southern property boundary.

Artificial fill has been placed along the eastern property boundary. This fill forms a berm that helps contain a shallow trough of ponded water. The ponded water was observed to enter the trough at the northeast corner of the site and flows to the south towards Sand Creek. The southern end of the trough includes a rip-rap lined outfall structure where the ponded water flows into Sand Creek.

Artificial fill has also been placed along the northern property boundary. More recently, end-dump piles of fill are present in the northeastern portion of the site. Scattered piles of concrete rubble were observed along the banks of Sand Creek.

Two easements cross the site, a 25 feet-wide Shell Oil Co. pipeline easement; as well as, an about 200 feet-wide PG&E power line easement. The Shell Oil pipeline trends east-west across the site and can be seen above ground where the pipeline crosses Sand Creek in the southeast portion of the site. The PG&E easement trends from the southeast corner of the site to the northwest to about the center of the northern property boundary.

SUBSURFACE CONDITIONS

Based on the five borings drilled and the ten test pits excavated for this investigation, we encountered the following subsurface conditions within the major flat portion of the site and the southern hillside portion. Below is a general description of the soil, bedrock, and groundwater conditions encountered in this investigation. For a more detailed description of the subsurface materials encountered, please refer to the boring logs (Plates 3 through 13) and test pit logs (Plates 15 through 17).

MAJOR FLAT PORTION OF THE SITE

The soil materials encountered in the five test borings (Boring B-1 through B-5) drilled within the major flat portion of the site, primarily consisted of very stiff to hard sandy clay, silty clay and clayey silt with interbedded layers of medium dense to dense clayey sand, silty sand and sandy silt at depths generally greater than about 20 feet.

The Atterberg limits tests of the upper silty clay from Borings B-1 and B-5 revealed liquid limits ranging from 46 to 51 and plasticity indices ranging from 25 to 31, indicating high expansion potential. This is consistent with the shrinkage cracks noted to be as wide as two to three inches on the surface soils throughout the site.

Groundwater was encountered in the borings at depths ranging from 25 to 29½ feet, except Boring B-3 which was terminated at a depth of approximately 25 feet. It should be noted that the actual groundwater level may fluctuate depending on factors such as seasonal rainfall, time of year, and local irrigation. At areas adjacent to Sand Creek, the groundwater level would also be influenced by the creek flows.

SOUTHERN HILLSIDE PORTION

During the course of this investigation in the southern hillside portion of the site, we encountered landslide debris, colluvium, residual soil, and bedrock. A description of each material in order from youngest to oldest is as follows:

Landslide Debris

A landslide area is located in the southwestern portion of the southern hillside portion of the site as shown by the symbol "Qls" on Plate 2. The landslide is depicted on regional landslide maps prepared by Nilsen (1975) and can be observed on aerial photographs covering the site vicinity. Based on our preliminary investigation, this landslide appears to be an earthflow-type landslide with a younger slump-type landslide located atop the upper portions of the earthflow. Based on exploratory Test Pits TP-8 through TP-10, the landslide mass is composed of rock blocks supported in a matrix of clayey soils. The toe of the landslide appears to be buried to some degree by the alluvial terrace deposits occupying the flatter portions of the site.

Colluvium

Areas of soil accumulation referred to as colluvium are present along the topographically lower portions of the hill slope as delineated by the symbol "Qc" on Plate 2. Colluvium is material that is generated by the in-place weathering of underlying bedrock on a slope that migrates down the slope under the influence of gravity. At the site, colluvium was found to consist of stiff, dark yellow-brown to light red-brown, silty to sandy clay. The clayey colluvial soils appear to be expansive.

Residual Soil

Areas of residual soil are located along the hill tops, ridgelines, and upper portions of the slope. Residual soil is generated by the in-place weathering of underlying bedrock and is generally less than about 4 feet thick. The residual soils encountered were generally medium stiff to stiff, gray-brown silty to sandy clay. The clayey residual soils appear to be expansive.

Bedrock

Bedrock unit of the Markley Sandstone member of the Kreyenhagen formation was encountered underlying residual soil and colluvium at the southern hillside portion of the site. The Markley Sandstone member was deposited in during the Late Eocene epoch of geologic time, approximately 36 to 50 million years before present. At the site, we encountered mainly sandstone with very minor amounts of siltstone and claystone. The sandstone was found to be light gray to light tan-brown, highly weathered, friable to weak, and highly fractured. The siltstone and claystone was found to be olive-brown to light gray, highly weathered, friable to weak, and crushed. Bedrock structure measured in exploratory test pits strikes roughly east-west and dips to the north (out of the hill) at inclinations ranging from 9 to 26 degrees. Subtle indications of folding were observed.

PRELIMINARY CONCLUSIONS AND RECOMMENDATIONS

GENERAL

From a geotechnical engineering standpoint, we believe that the proposed residential development (as shown on the land plan by Carlson, Barbee & Gibson, Inc., dated June 1, 2006) is generally feasible for this site, provided that a design-level geotechnical investigation is carried out by us and

the recommendations thereof are incorporated into the project design and construction. The main geologic and geotechnical issues that would have primary cost impacts on the project are discussed in the following sections.

It should be noted that the preliminary conclusions and recommendations below are intended to assist Pulte Home's evaluation and planning of the proposed residential development at the site. These preliminary conclusions and recommendations are insufficient for the design and construction of the proposed residential development, and a design-level geotechnical investigation is required. The preliminary conclusions and recommendations contained in this report are subject to modification (if required) depending on the findings from the design-level geotechnical investigation.

EXPANSIVE SOILS

The results of our Atterberg limit tests on the upper dark gray-brown soil samples collected from Borings B-1 and B-5 indicate high expansion potential. Typically, expansive soils are sensitive to moisture changes. To minimize the potential impact of swelling and shrinking of expansive soils on building foundations, swimming pools (if any), slabs-on-grade, and exterior concrete flatwork, special measures should be incorporated into design and construction. We anticipate that special measures would include the following:

1. Conditioning the expansive soils to higher moisture content during site preparation and grading;

2. Constructing swimming pool and deck areas with low expansive import fill;

3. Supporting residential units (with slabs-on-grade floors) on structural slab foundations designed to withstand potential movements of expansive soils;

4. Pre-soaking near-surface expansive soils prior to concrete placement for slab foundations;

5. Conditioning expansive subgrade soils in garage slabs and exterior concrete flatwork areas to higher moisture contents before placement of baserock or concrete (if the flatwork is supported directly on the subgrade); and

6. Providing surface drainage away from building foundations, and draining rainwater collected on roofs through pipes connecting to adjacent storm drains.

UNDOCUMENTED ARTIFICIAL FILL

It has been noted that undocumented artificial fill containing concrete rubble was placed along the eastern and northern property boundaries. The approximate extent of the undocumented artificial fill, based on our observations on site during this investigation, is shown on Plate 2. In general, the portion of the existing fill not removed by design cut should be overexcavated entirely and replaced with engineered fill.

For preliminary budgetary planning purposes, we have roughly estimated that the quantity of the undocumented artificial fill along the eastern and northern property boundaries could be on the order of approximately 120,000 to 150,000 cubic yards (existing at the time of this investigation). It must be emphasized that this is only a crude estimate, which was based on rough plan dimensions of the existing fill and should be subject to verification by surveying (if required).

Based on our observations of the fill materials exposed on the surface, we estimate that roughly 10 to 15 percent of the existing fill consists of deleterious debris, which will be unsuitable for reuse as engineered fill and may need to be hauled-off site. Similarly, this is only a crude estimate, which was based on observations of the fill materials exposed on the surface, and should be subject to verification by further investigation at design stage.

It is estimated that the rest of the existing fill (roughly 85 to 90 percent of the existing fill) can generally be reused as engineered fill, provided that it is free of significant vegetation, trash, deleterious matter and rock fragments greater than 6 inches in size.

STRIPPING DURING SITE PREPARATION

Areas to be graded should be cleared and stripped of all vegetation. Strippings can be stockpiled and reused as topsoil in landscape areas. Based on our observations of the existing site conditions, it is anticipated that the depth of stripping would be about 2 to 4 inches. Alternatively, heavy disking of the upper 12 to 18 inches of the soils may be used in lieu of conventional stripping. Our experiences indicate that two to three rounds of heavy, thorough disking before site grading may be sufficient. In general, heavy disking works better when the vegetation is low and dry. If the site is to be graded in late spring when vegetation is heavier and greener, mowing may be required to remove the green vegetation before disking.

BUILDING FOUNDATIONS

It is our opinion, from a geotechnical engineering standpoint, that low-rise buildings for the proposed residential development can generally be supported on shallow foundations.

To reduce the adverse effects of on-site surface soils with high expansion potential, post-tensioned concrete slab foundations should be considered. It is estimated that the thickness of the post-tensioned concrete slabs would be approximately in the order of 12 to 14 inches. The upper 18 inches of the subgrade soils should be presaturated to at least 7 percent above optimum moisture content.

At this early feasibility investigation stage, it is difficult to determine what the actual foundation supporting materials will be, especially that the grading plans are not yet developed. It is recommended that additional study be carried out at design-stage and, at that time, the geotechnical parameters for foundation design can be provided based on the soil conditions at different areas.

CREEK SETBACK

New buildings and improvements should be adequately set back from Sand Creek to avoid undermining of foundations which might be caused by soil slumps due to oversteepened slopes and/or actively eroding creek bank undercutting. It is our opinion, from a geotechnical engineering standpoint, that the horizontal setback distance from the toe of the creek banks should be at least 3 times the bank height. At the design stage, slope stability analyses should be carried out based on the surface and subsurface conditions at specific locations to check whether additional setback is required.

POTENTIAL EFFECTS OF SEEPAGE FROM EXISTING BASINS

The existing topographic plan (dated October 28, 2004) provided by Carlson, Barbee & Gibson, Inc., shows only one basin of Contra Costa County Flood Control (CCCFC) to the southwest of the site. During our site visit, we noted an additional basin adjacent to the southwestern property boundary. As this additional basin is located in close proximity to the multi-family development, it is our opinion that the potential effects of seepage from the basin to the proposed development should be investigated at design stage in light of a more precise location of the basin (confirmed by survey) relative to the actual development layout.

SEISMIC CONSIDERATIONS

FAULTING

The site is located outside current State of California earthquake fault zones for active faults, (Hart and Bryant, 1999). The potential for fault rupture at the site appears to be low.

The Antioch fault has been interpreted as crossing the valley floor about 200 feet southwest of the site. This fault was considered active, and it had been provided with an official Alquist-Priolo earthquake fault zone that extended roughly 500 feet into the southwest part of the site (Gay, 1976). The zone was deleted in the early 1990s, and the fault is no longer considered active (Wills, 1991).

We do not believe that the City of Antioch creates further issues with regard to the fault in this particular location. We reviewed the Environmental Hazards section of the City of Antioch General Plan, dated November 24, 2003, and there is no mention of the Antioch fault. That document (p. 11-1) states "... no known active faults are located within the Planning Area." In addition, the City of Antioch's website allows inquiries to be sent. We sent them an inquiry at the start of this investigation asking if the City has planning policies regarding the Antioch fault; we received no reply. If the City has a policy on active faults different from the one in their published General Plan, then it is not manifest.

GROUND SHAKING

Because of the proximity to the Mt. Diablo thrust fault and other active faults in the area (refer to *"Seismicity"* section), it is likely that the site will be subjected to strong ground shaking from at least one moderate to severe earthquake during the life span of the project. According to the 2001

California Building Code (CBC), the following parameters should be incorporated into the structural design of new buildings at the subject site:

Seismic Zone	4
Soil Profile Type	S_D
Seismic Source Type	B
Closest Distance (Mt. Diablo thrust fault)	0 km

It is our opinion that the structural integrity of new buildings is a primary factor in determining possible seismic damage and that the level of seismic damage would be only nominally influenced by the foundation system selected. We recommend that, at a minimum, the buildings be designed in conformance with the current edition of CBC.

LIQUEFACTION

Liquefaction is the temporary transformation of loose, saturated, cohesionless soil into a viscous liquid during strong ground shaking from a major earthquake. The materials encountered in our borings for this feasibility investigation primarily consisted of very stiff cohesive clayey soils. Relatively less cohesive sandy soils were encountered locally in our borings. However, these sandy soils were medium dense to dense and generally encountered at depths greater than 20 feet. Based on the depth and relative density of these soil deposits, the potential for liquefaction to occur is considered to be low.

LURCHING

Lurching is the sudden swaying, spreading or rolling of the ground during a strong earthquake. Lurching usually is accompanied by the development of fissures on slopes overlain by weak soils. Grading in conformance with the recommendations to be provided in design-level geotechnical investigation should reduce the risk of lurching to low.

GROUND SUBSIDENCE

Ground subsidence can occur as a result of "shakedown" when dry, cohesionless soils are subjected to earthquake vibration of high amplitude. In general, significant deposits of loose sandy soils do not exist at the site; therefore seismic induced ground subsidence is not considered a geologic hazard on the site.

EARTHQUAKE-INDUCED LANDSLIDING

Stability of all slopes is lower during earthquake disturbances than at other times. Grading in accordance with the recommendations to be provided in design-level geotechnical investigation should reduce the risk of seismically-induced landslides to low.

FUTURE DESIGN-LEVEL GEOTECHNICAL INVESTIGATION

A design-level geotechnical investigation will be required for the final design and construction of the project at the site. Such an investigation would include additional subsurface exploration, laboratory

testing, and development of conclusions and recommendations, particularly on those geologic/geotechnical aspects as discussed above.

LIMITATIONS

The findings and conclusions of this geologic/geotechnical feasibility investigation report are based on the information provided to us regarding the proposed project, subsurface conditions encountered at the boring and test pit locations and professional judgment. The study has been conducted in accordance with current professional geotechnical engineering standards; no other warranty is expressed or implied.

The logs of the borings and test pits show subsurface conditions encountered at the locations and date indicated; it is not warranted that they are representative of such conditions at other locations and times. The locations of the borings and test pits were estimated by pacing from the existing surface features and should be considered approximate only.

Respectfully submitted,

BERLOGAR GEOTECHNICAL CONSULTANTS

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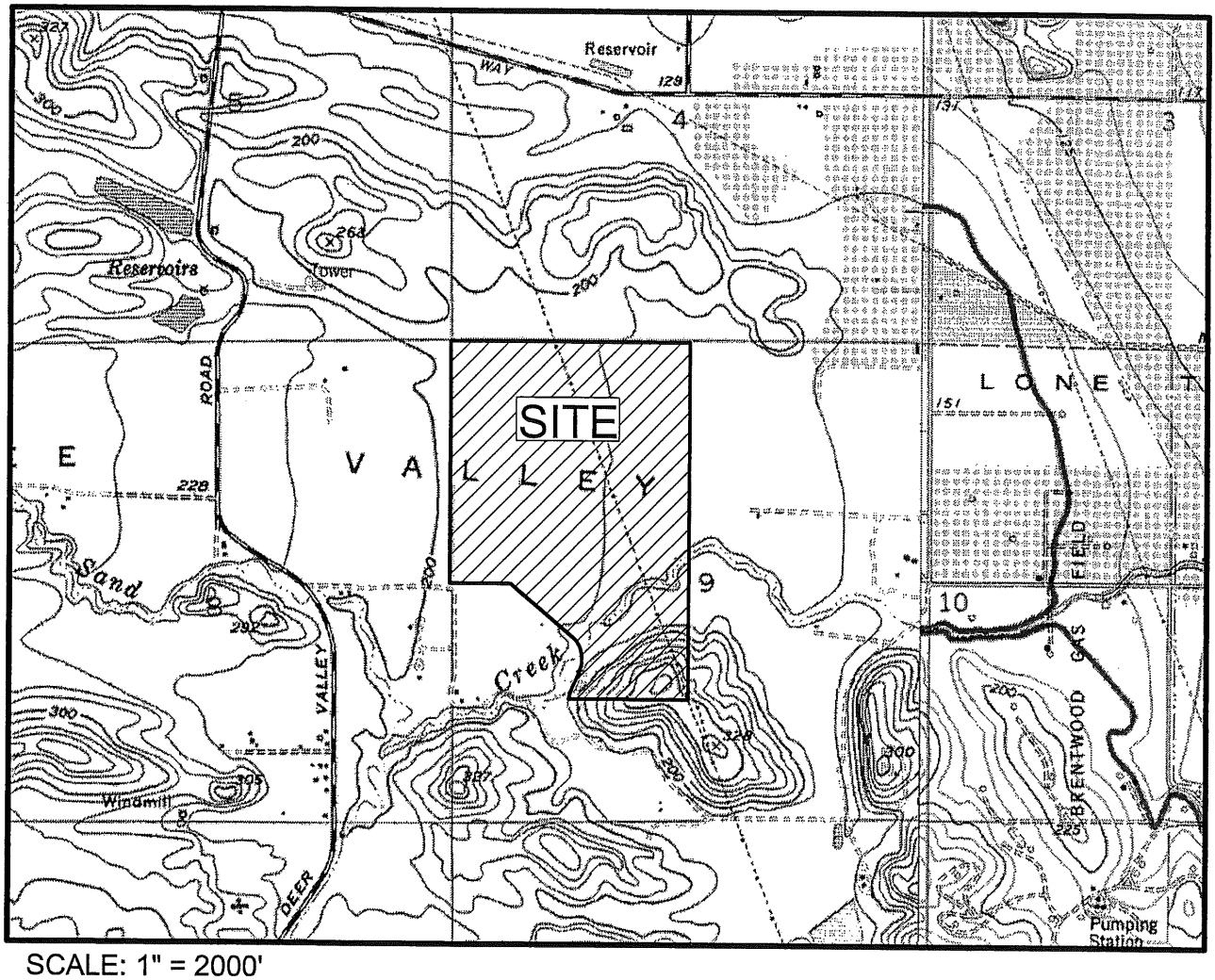
SKT/FJG/PSL:st\fjg\jmb

Attachments:
- References
- Plate 1 – Vicinity Map
- Plate 2 – Site Plan
- Plates 3 through 13 – Boring Logs
- Plate 14 – Key to Boring Log Symbols
- Plate 15 through 17 – Test Pit Logs
- Plate 18 – Atterberg Limits Test Data
- Plate 19 – Summary of Passing No. 200 Sieve Test Data
- Plate 20 – Summary of Unconfined Compression Test Data

Copies: Addressee (10)

word/report/19093

JOB NUMBER: 2793.100 DATE: 11-12-04 BY: CC



SCALE: 1" = 2000'

VICINITY MAP

WILLIAMSON PROPERTY
HILLCREST AVENUE
ANTIOCH, CALIFORNIA
FOR
PULTE HOME CORPORATION

BASE: PORTION OF U.S.G.S. 7.5 MINUTE TOPOGRAPHIC QUADRANGLE, ANTIOCH SOUTH, CALIFORNIA, PHOTOREVISED 1980, AT A SCALE OF 1:24,000.

PLATE 1

BERLOGAR GEOTECHNICAL CONSULTANTS

BORING LOG B-1

JOB NUMBER: 2793.100 **DATE DRILLED:** 11-9-04

JOB NAME: Williamson Property **SURFACE ELEVATION:** 196 feet

DRILL RIG: Hollow-stem Auger **DATUM:** Mean Sea Level

SAMPLER TYPE:	DRIVE WEIGHT - LB	HEIGHT OF FALL - IN
■ 2.5 inch I.D. Split Barrel	140	30
☑ Standard Penetration Test	140	30

BLOWS PER FT.	MOISTURE CONTENT %	DRY UNIT WEIGHT p.c.f.	DEPTH IN FEET	USCS CLASSIFICATION	DESCRIPTION
				CL	SANDY CLAY, dark gray-brown, moist, hard, rootlets
60/6"	11.0	98			
				CL	SILTY CLAY, dark gray-brown, moist, hard, trace caliche, trace limonite, some fine-to medium-grained sand
60	13.2	101	5		
					at 8 feet, some tiny holes, trace fine gravel
56	11.2	99		ML	CLAYEY SILT, brown, moist, hard, trace fine-grained sand
				CL	SANDY CLAY, dark brown, moist, hard, trace limonite, fine-to medium-grained sand
			10		
44	12.9	110			at 14 feet, some tiny holes, very stiff, fine-to medium-grained sand
			15		
				CL	SILTY CLAY, brown, moist, very stiff, trace caliche
42	26.0	72		CL	SANDY CLAY, dark brown, moist, very stiff, fine-to medium-grained sand
			20		

PLATE 3

BORING LOG B-1

JOB NUMBER: 2793.100 **SHEET:** 2 **OF:** 2

JOB NAME: Williamson Property **DEPTH:** 20 feet **TO** 31-1/2 feet

NOTES:

BLOWS PER FT.	MOISTURE CONTENT %	DRY UNIT WEIGHT p.c.f.	DEPTH IN FEET	USCS CLASSIFICATION	DESCRIPTION
				CL	SANDY CLAY, dark brown, moist, very stiff, fine-to medium-grained sand
				SC	CLAYEY SAND, brown, moist, medium dense, fine-to coarse-grained sand
39	25.6	90			
			25	CL	SILTY CLAY, brown, moist, very stiff
51	27.9	93		SC	CLAYEY SAND, brown to light gray, saturated, dense
30	-	-	30		
				CL	SILTY CLAY, reddish-brown, saturated, very stiff
					Boring terminated at 31-1/2 feet Groundwater encountered at 29 feet
			35		
			40		

BORING LOG B-2

JOB NUMBER: 2793.100 **DATE DRILLED:** 11-9-04

JOB NAME: Williamson Property **SURFACE ELEVATION:** 195 feet

DRILL RIG: Solid Flight Auger **DATUM:** Mean Sea Level

SAMPLER TYPE:	DRIVE WEIGHT - LB	HEIGHT OF FALL - IN
■ 2.5 inch I.D. Split Barrel	140	30
☑ Standard Penetration Test	140	30

BLOWS PER FT.	MOISTURE CONTENT %	DRY UNIT WEIGHT p.c.f.	DEPTH IN FEET	USCS CLASSI-FICATION	DESCRIPTION
76	10.6	109		CL	SILTY CLAY, dark gray-brown, moist, hard, rootlets, trace fine gravel, trace limonite, some fine-to medium-grained sand
62	11.7	117	5		at 4 feet, trace caliche
				CL	SANDY CLAY, dark brown, moist, very stiff to hard, trace caliche, trace fine gravel, fine-to medium-grained sand
41	12.5	107	10		below 12 feet, hard
65	13.6	103	15		below 17 feet, more sandy
56	17.3	107	20		

PLATE 5

BORING LOG B-2

JOB NUMBER: 2793.100 **SHEET:** 2 **OF:** 3

JOB NAME: Williamson Property **DEPTH:** 20 feet **TO** 40 feet

NOTES:

BLOWS PER FT.	MOISTURE CONTENT %	DRY UNIT WEIGHT p.c.f.	DEPTH IN FEET	USCS CLASSIFICATION	DESCRIPTION
				CL	SANDY CLAY, dark brown, moist, very stiff to hard, trace caliche, trace fine gravel, fine-to medium-grained sand
40	16.2	110		CL	SILTY CLAY, brown, moist, very stiff, some fine-grained sand
			25	SC	CLAYEY SAND, brown, moist, medium dense, fine-to medium-grained sand
24	-	-			below 29 feet, saturated
			30	CL	SANDY CLAY, brown, saturated, stiff, fine-to medium-grained sand
				SC	CLAYEY SAND, brown, saturated, medium dense, fine-to medium-grained sand
18	-	-	35		
15	-	-		ML	CLAYEY SILT, brown, saturated, medium stiff to stiff, some fine-to medium-grained sand
			40		

BORING LOG B-2

JOB NUMBER: 2793.100 **SHEET:** 3 **OF:** 3

JOB NAME: Williamson Property **DEPTH:** 40 feet **TO** 44-1/2 feet

NOTES:

BLOWS PER FT.	MOISTURE CONTENT %	DRY UNIT WEIGHT p.c.f.	DEPTH IN FEET	USCS CLASSI-FICATION	DESCRIPTION
17	-	-		ML	CLAYEY SILT, brown, saturated, medium stiff to stiff, some fine-to medium-grained sand
				ML	SANDY SILT, brown, saturated, medium dense, fine-to coarse-grained sand
			45		Boring terminated at 44-1/2 feet Groundwater encountered at 29 feet
			50		
			55		
			60		

BORING LOG B-3

JOB NUMBER: 2793.100 **DATE DRILLED:** 11-9-04

JOB NAME: Williamson Property **SURFACE ELEVATION:** 190 feet

DRILL RIG: Solid Flight Auger **DATUM:** Mean Sea Level

SAMPLER TYPE: ■ 2.5 inch I.D. Split Barrel **DRIVE WEIGHT - LB** 140 **HEIGHT OF FALL - IN** 30

BLOWS PER FT.	MOISTURE CONTENT %	DRY UNIT WEIGHT p.c.f.	DEPTH IN FEET	USCS CLASSIFICATION	DESCRIPTION
				CL	SANDY CLAY, dark gray-brown, moist, hard, rootlet, some caliche, trace fine gravel
50/6"	12.4	99			
62	13.8	116	5		
				CL	SILTY CLAY, dark brown, moist, very stiff to hard, trace limonite, some fine-to medium-grained sand
35	-	-			
			10		
50	16.2	100			
			15		
				ML	CLAYEY SILT, brown, moist, very stiff, some fine-grained sand
28	16.4	100			
			20		

PLATE 8

BORING LOG B-3

JOB NUMBER: 2793.100 **SHEET:** 2 **OF:** 2

JOB NAME: Williamson Property **DEPTH:** 20 feet **TO** 25 feet

NOTES:

BLOWS PER FT.	MOISTURE CONTENT %	DRY UNIT WEIGHT p.c.f.	DEPTH IN FEET	USCS CLASSIFICATION	DESCRIPTION
				ML	CLAYEY SILT, brown, moist, very stiff, some fine-grained sand
				SC	CLAYEY SAND, brown, moist, medium dense
22	18.9	99		SM	SILTY SAND, brown, moist, medium dense, fine-to coarse-grained sand
				CL	SANDY CLAY, brown, moist, stiff
			25		Boring terminated at 25 feet No groundwater encountered
			30		
			35		
			40		

BORING LOG B-4

JOB NUMBER: 2793.100 **DATE DRILLED:** 11-9-04

JOB NAME: Williamson Property **SURFACE ELEVATION:** 173 feet

DRILL RIG: Solid Flight Auger **DATUM:** Mean Sea Level

SAMPLER TYPE:	DRIVE WEIGHT - LB	HEIGHT OF FALL - IN
■ 2.5 inch I.D. Split Barrel	140	30
☑ Standard Penetration Test	140	30

BLOWS PER FT.	MOISTURE CONTENT %	DRY UNIT WEIGHT p.c.f.	DEPTH IN FEET	USCS CLASSIFICATION	DESCRIPTION
				CL	SANDY CLAY, dark gray-brown, moist, hard, rootlets, trace caliche, fine-to medium-grained sand
50/6"	9.4	101			below 3 feet, dark brown
71	12.5	97	5		
					below 8 feet, brown, very stiff
42	14.8	100	10		
29	12.9	102	15		
					below 19 feet, more silty
32	14.7	98	20		

PLATE 10

BORING LOG B-4

JOB NUMBER: 2793.100 **SHEET:** 2 **OF:** 2

JOB NAME: Williamson Property **DEPTH:** 20 feet **TO** 30-1/2 feet

NOTES:

BLOWS PER FT.	MOISTURE CONTENT %	DRY UNIT WEIGHT p.c.f.	DEPTH IN FEET	USCS CLASSI-FICATION	DESCRIPTION
				CL	SANDY CLAY, brown, moist, very stiff
21	-	-	25	SC	CLAYEY SAND, brown, moist, medium dense, fine-to medium-grained sand
				CL	SANDY CLAY, brown, wet, stiff, fine-to medium-grained sand
38	-	-	30	SM	SILTY SAND, brown, saturated, dense, fine-to medium-grained sand
					Boring terminated at 30-1/2 feet Groundwater encountered at 29-1/2 feet
			35		
			40		

BORING LOG B-5

JOB NUMBER: 2793.100 **DATE DRILLED:** 11-9-04

JOB NAME: Williamson Property **SURFACE ELEVATION:** 176 feet

DRILL RIG: Solid Flight Auger **DATUM:** Mean Sea Level

SAMPLER TYPE:	DRIVE WEIGHT - LB	HEIGHT OF FALL - IN
■ 2.5 inch I.D. Split Barrel	140	30
☑ Standard Penetration Test	140	30

BLOWS PER FT.	MOISTURE CONTENT %	DRY UNIT WEIGHT p.c.f.	DEPTH IN FEET	USCS CLASSI-FICATION	DESCRIPTION
				CL/CH	SILTY CLAY, dark gray-brown, moist, very stiff, rootlets
30	16.5	101			
24	12.9	106			below 4 feet, trace caliche, more sandy
			5		
					below 8 feet, hard
50/6"	13.7	111			
			10		
					below 11 feet, very stiff
25	16.9	107			
					below 14 feet, more sandy
			15		
				ML	CLAYEY SILT, brown, moist, stiff
22	18.2	94			
20	-	-	20	SM	SILTY SAND, brown, wet, medium dense

PLATE 12

BORING LOG B-5

JOB NUMBER: 2793.100 **SHEET:** 2 **OF:** 2

JOB NAME: Williamson Property **DEPTH:** 20 feet **TO** 29-1/2 feet

NOTES:

BLOWS PER FT.	MOISTURE CONTENT %	DRY UNIT WEIGHT p.c.f.	DEPTH IN FEET	USCS CLASSI-FICATION	DESCRIPTION
20	-	-		SM	SILTY SAND, brown, wet, medium dense
				ML	CLAYEY SILT, brown, wet, stiff
37	26.2	96			
				SM	SILTY SAND, brown, wet, medium dense, fine-to coarse-grained sand
26	-	-	25 ▽		
13	-	-		CL	SANDY CLAY, brown, wet, stiff
			30		Boring terminated at 29-1/2 feet Groundwater encountered at 25 feet
			35		
			40		

MAJOR DIVISIONS			CLASSIFICATION	TYPICAL NAMES
COARSE GRAINED SOILS MORE THAN HALF IS LARGER THAN #200 SIEVE	GRAVELS MORE THAN HALF COARSE FRACTION IS LARGER THAN NO. 4 SIEVE SIZE	CLEAN GRAVELS WITH LITTLE OR NO FINES	GW	WELL GRADED GRAVELS, GRAVEL - SAND MIXTURES
			GP	POORLY GRADED GRAVELS, GRAVEL - SAND MIXTURES
		GRAVEL WITH OVER 12% FINES	GM	SILTY GRAVELS, POORLY GRADED GRAVEL - SAND - SILT MIXTURES
			GC	CLAYEY GRAVELS, POORLY GRADED GRAVEL - SAND - CLAY MIXTURES
	SANDS MORE THAN HALF COARSE FRACTION IS SMALLER THAN NO.4 SIEVE SIZE	CLEAN SANDS WITH LITTLE OR NO FINES	SW	WELL GRADED SANDS, GRAVELLY SANDS
			SP	POORLY GRADED SANDS, GRAVELLY SANDS
		SANDS WITH OVER 12% FINES	SM	SILTY SANDS, POORLY GRADED SAND- SILT MIXTURES
			SC	CLAYEY SANDS, POORLY GRADED SAND - CLAY MIXTURES
FINE GRAINED SOILS MORE THAN HALF IS SMALLER THAN #200 SIEVE	SILTS AND CLAYS LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS, OR CLAYEY SILTS WITH SLIGHT PLASTICITY
			CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
			OL	ORGANIC CLAYS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SANDY OR SILTY SOILS, ELASTIC SILTS
			CH	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
			OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS			Pt	PEAT AND OTHER HIGHLY ORGANIC SILTS

UNIFIED SOIL CLASSIFICATION SYSTEM

Blows per ft.	Moisture Content (%)	Dry Unit Weight (pcf)	Depth in Feet	USCS Classification	
					Bulk Sample
					2.5" I.D. Split Barrel Sample
					2.8" I.D. Shelby Tube Sample
					No sample recovered
					Standard Penetration Test interval
					Well defined stratum change
					Gradual stratum change
					Interpreted stratum change
					Apparent ground water level at date noted. Seasonal weather conditions, site topography, etc., may cause changes in water level indicated on logs.

Note: Soils described as dry, moist, and wet are estimated to be dry of optimum, near optimum, and wet of optimum moisture content, respectively. Saturated soils are estimated to be within areas of free groundwater.

KEY TO BORING LOG SYMBOLS

JOB NUMBER: 2793.100 DATE: 11-12-04 BY: CC

TEST PIT LOGS

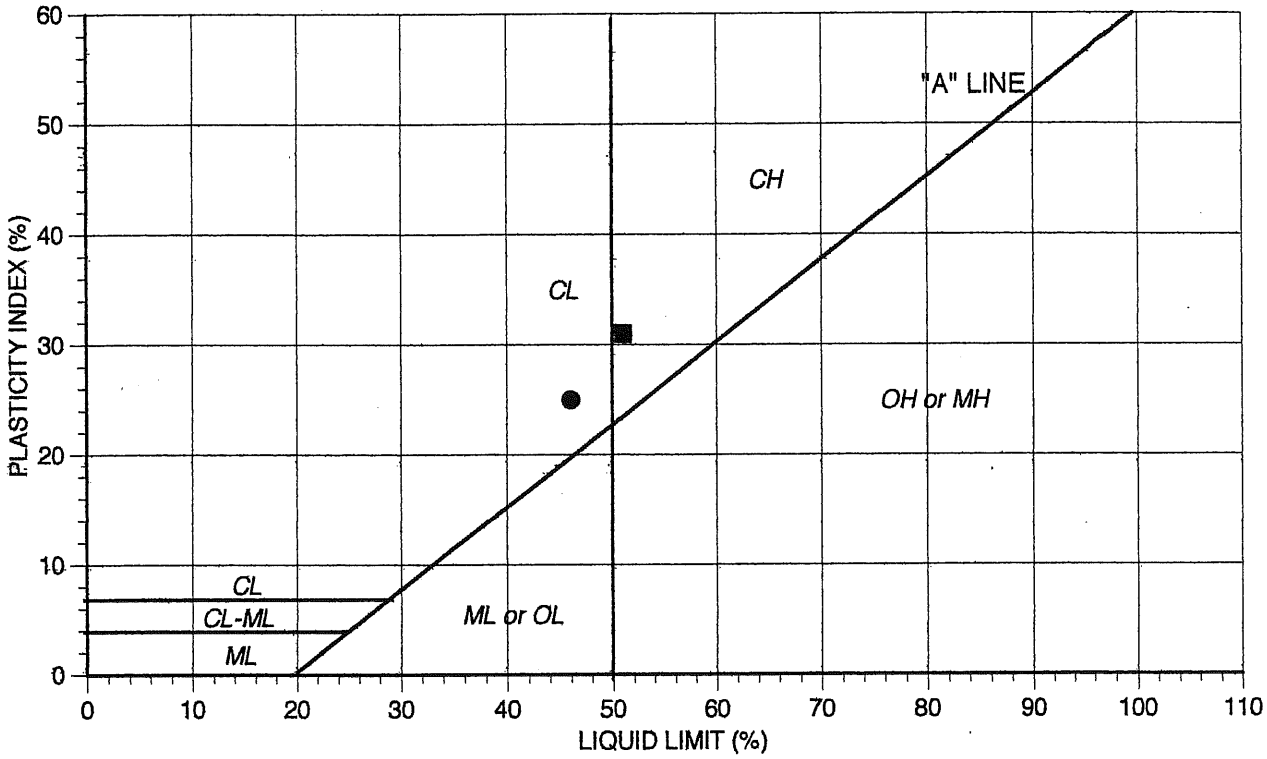
Test Pit Number	Depth (feet)	Description
TP-1	0 – 2½	Silty Clay, dark gray-brown, moist, medium stiff to stiff.
	2½ – 4	Silty Clay, dark yellow-brown to dark red-brown, moist, stiff, trace subangular gravel up to 1½-inch, trace to some fine-grained sand.
	4 – 8	Sandstone, fine-grained, light tan-brown, highly weathered, friable to weak, crushed, thin siltstone beds, trace carbonate. Bedding N80W 9N.
		Total Depth 8 feet No free groundwater encountered
TP-2	0 – 5	Sandy Clay, dark yellow-brown, moist, stiff, trace pebbles.
	5 – 8	Sandstone, fine-grained, light gray, highly weathered, friable to weak, highly fractured to crushed, thinly bedded, trace carbonate. Bedding N70W 21N, joints N80W 80S, N60E 85N.
		Total Depth 8 feet No free groundwater encountered
TP-3	0 – 5	Sandy Clay, dark yellow-brown, moist, stiff, trace pebbles, trace to some silt.
	5 – 10	Sandstone, fine-grained, light tan-brown, highly weathered, weak, highly fractured, 1-inch siltstone bed at 9 feet, trace carbonate. Bedding N83W 26N, joints N80W 85S, N10E 88N.
		Total Depth 10 feet No free groundwater encountered
TP-4	0 – 6	Sandy Silty Clay, dark yellow-brown, moist, stiff, trace carbonate, trace pebbles.
	6 – 8	Clayey Siltstone/Silty Claystone, olive-brown to light red-brown, highly weathered, weak, crushed, thinly laminated.
	8 – 10	Sandstone, fine-grained, light gray, highly weathered, weak, crushed. Bedding N75W 15N.
		Total Depth 10 feet No free groundwater encountered
TP-5	0 – 1	Silty Clay, dark yellow-brown, moist, medium stiff, some fine-grained sand.
	1 – 3	Sandstone, fine-grained, light gray to tan-brown, highly weathered, friable to weak, highly fractured to crushed, thinly laminated.
	3 – 5	Sandstone, fine-grained, light orange-brown, highly weathered, friable to weak, crushed. Bedding N83E 10N.
		Total Depth 5 feet No free groundwater encountered

TEST PIT LOGS

Test Pit Number	Depth (feet)	Description
TP-6	0 – 1½	Silty Sandy Clay, dark yellow-brown, moist, medium stiff.
	1½ – 6	Sandstone, fine-grained, tan-brown, highly weathered, friable to weak, crushed, thinly bedded, 1-inch siltstone bed at 5 feet. Bedding N80W 15N.
		Total Depth 6 feet No free groundwater encountered
TP-7	0 – 2	Silty Clay, dark yellow-brown, moist, medium stiff.
	2 – 4	Clayey Siltstone, gray, highly weathered, weak, crushed, thinly laminated.
	4 – 6	Sandstone, fine-grained, tan-brown, highly weathered, friable, crushed. Bedding N85E 14N.
		Total Depth 6 feet No free groundwater encountered
TP-8	0 – 6	Silty Clay, gray-brown, moist, stiff, trace fine-grained sand.
	6 – 10	Silty Clay, dark yellow-brown, dry to moist, stiff, trace angular sandstone and siltstone cobbles (some are friable), trace fine-grained sand, porous (landslide debris).
	10 – 15	Sandy Silty Clay, yellow-brown, dry, stiff, trace angular siltstone gravel up to 1-inch, friable sandstone gravel up to 2-inch has weathering rind from in-place weathering (landslide debris).
		Total Depth 15 feet No free groundwater encountered
TP-9	0 – 2	Silty Clay, dark gray-brown, moist, stiff.
	2 – 7	Silty Clay and Cobbles, yellow-brown, moist, stiff, angular cobbles of Sandstone and Siltstone up to 6-inches, block-in-matrix texture, very faint residual bedrock structure in parts (landslide debris).
		Total Depth 7 feet No free groundwater encountered

TEST PIT LOGS

Test Pit Number	Depth (feet)	Description
TP-10	0 – 3	Silty Clay, gray-brown, moist, stiff.
	3 – 8	Silty Clay and Sandstone gravel, dark yellow-brown, moist, stiff, angular gravel up to 1-inch, block-in-matrix texture (landslide debris).
	8 – 15 (north end)	Sandstone and Sandy Clay, light tan-brown to gray, highly weathered, friable, crushed with soil-filled dilated joints, highly disrupted bedrock structure (landslide debris).
	8 – 15 (south end)	Silty Clay and gravel, yellow-brown, moist, stiff, some fine-grained sand, angular gravel of Sandstone and Siltstone up to 6-inches (landslide debris).
		Total Depth 15 feet No free groundwater encountered



SYMBOLS	LOCATION	LIQUID LIMIT	PLASTICITY INDEX	USCS CLASSIFICATION
●	B-1 at 5 feet	46	25	CL
■	B-5 at 1 foot	51	31	CH

JOB NUMBER: 2793.100 DATE: 11-18-04 BY: CC

ATTERBERG LIMITS TEST DATA

PLATE 18

BERLOGAR GEOTECHNICAL CONSULTANTS

SUMMARY OF PASSING #200 SIEVE TEST DATA			
Boring Number	Depth (feet)	Material	% Passing #200 Sieve
B-2	34	Light Red-Brown Clayey Sand	31.2
B-2	43½	Light Red-Brown Sandy Silt	57.6
B-5	25	Light Red-Brown Poorly Graded Sand with Silt	11.6

SUMMARY OF UNCONFINED COMPRESSION TEST DATA					
Boring Number	Depth (feet)	Moisture Content (%)	Dry Density (pcf)	Compressive Strength (psf)	Strain at Failure (%)
B-2	4	11.7	117	15,456	1.3
B-5	4½	12.9	106	13,823	4.3

APPENDIX H

STORMWATER CONTROL PLAN

Preliminary
Stormwater Control Plan
Aviano Project
City of Antioch, California

Report prepared for:

Pulte Home Corporation

Prepared by:

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May 2008

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Preliminary Stormwater Control Plan, Aviano Project, City of Antioch, California

Balance Project Assignment 206040
by

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1. INTRODUCTION

This report presents the preliminary Stormwater Control Plan (SWCP) for the Aviano residential development project (Project) located in the City of Antioch, Contra Costa County, California. It sets forth the strategy for management of post-construction stormwater quality as required by the Central Valley Regional Water Quality Control Board (RWQCB or Regional Board) and the Contra Costa Clean Water Program (CCCWP). The SWCP intends to minimize or eliminate stormwater related impacts of the Project both on-site and off-site. In addition, it aims to meet or exceed current design guidelines provided by the CCCWP and RWQCB while recognizing the constraints and opportunities associated with managing stormwater runoff at the site.

The SWCP uses the three-level approach to stormwater management promoted by CCCWP and presented in the Stormwater C.3 Guidebook (CCCWP, 2006). Level I: Site Design sets the stage for an effective plan, primarily by limiting impervious area and the connection between impervious areas. Level II: Source Control focuses on preventing or limiting the release of constituents and flows of concern. Level III: Treatment Control aims to reduce constituents and flows of concern once they are mobilized. At each level, the plan utilizes structural or design elements known as Best Management Practices (BMPs), which refer to "any kind of procedure or device designed to minimize the quantity of pollutants that enter the storm drain system". Most recently, regulators are promoting the use of Integrated Management Practices (IMPs) for the structural components of stormwater management. An IMP is defined as "a facility (BMP) that provides small-scale treatment, retention or detention and is integrated into site layout, landscaping and drainage design".

1.1 Stormwater Control Plan objectives

Specific objectives of this report are to:

- Summarize relevant meteorological, geological and soils information needed to describe the hydrologic setting of the site;
- Identify key opportunities and constraints for stormwater management at the site;
- Identify a preferred approach for improving the quality of storm runoff before it is discharged from the site;
- Set forth a hierarchical suite of BMPs that includes site design, source control and treatment control elements;
- Provide the City, County, Regional Board and others with reasonable certainty that the Project will implement appropriate measures to address urban runoff impacts and comply with regulatory requirements;

- Summarize pertinent regulatory framework as a reference for future detailed site design work;
- Summarize facility maintenance requirements and funding for the site BMPs.

1.2 Work Conducted

To meet the specific objectives identified in Section 1.1, Balance staff reviewed current studies and documents relating to the hydrology of the site and surrounding area, conducted field visits to the site, reviewed the BMPs proposed for the Project, and prepared hydrologic and hydraulic analysis of the proposed site plan and BMPs. A site visit was conducted on June 2, 2006 to observe site topography, drainage patterns, off-site contributing areas, and downstream receiving waters. Balance staff prepared hydrologic and hydraulic analyses of the site BMPs, using both the U.S. Army Corps of Engineers HEC-HMS and U.S. Environmental Protection Agency's Hydrologic Simulation Program – Fortran (HSPF) modeling platforms, to assist in refining sizing of BMPs and to investigate potential hydromodification issues in the receiving waters. The two models were optimized to define appropriate sized basins that would serve hydromodification control, water quality management, and flood control.

2. PROJECT HYDROLOGIC SETTING

As with any residential development site, a fundamental understanding of the hydrologic setting is important in assessing the opportunities and constraints at the project site with respect to stormwater management.

2.1 Project Location, Description

2.1.1 Project location

The 155-acre Aviano project is located within a total property boundary area of roughly 200 acres in the City of Antioch, Contra Costa County. Figure 1 is a location map of the site. The property lies astride Sand Creek, a major left bank tributary of Marsh Creek. The project site is located on the left (north) bank of Sand Creek, north and east of the proposed Contra Costa County Flood Control District (CCCFCD) Upper Sand Creek Regional Flood Control Basin and west of the future southern extension of Hillcrest Avenue. Major infrastructure permitted separately from the residential project includes a western extension of Sand Creek Road across the project site generally parallel to Sand Creek.

2.1.2 Project description

The Project proposes to construct 533 single-family homes on approximately 130 acres north of Sand Creek. Within this area, roughly 20 acres is open space or parks, including a 10-acre corridor through the middle of the site from north northwest to south southeast along a PG&E right of way containing high tension trunk lines. The extension of Sand Creek Road will run along the south side of the Project covering roughly 10 acres. South of the roadway is a roughly 15-acre area to the top of the left creek bank that includes a creek setback of varying widths. Outside of the creek setback, this area will contain two of the stormwater basins for the Project and additional preserved open space. The 35-acre area from the top of the left bank of Sand Creek to the southern property boundary will be preserved as open space. There is a 10-acre set-aside for a school in the southwest corner of the property north of Sand Creek Road and outside of the project area. The construction of the school is not part of the Aviano project.

2.2 Existing Features and Conditions

Currently, the project area is undeveloped open-space / range land, primarily grassland with mature oak and buckeye trees along the riparian corridor of the creek and some brambles and shrub along the northern boundary. Immediately north of the project site is an 86.4 acre residential area of single-family homes. Existing drainage for the latter area will be discussed in Section 2.2.4. West of the project site is a 160-acre area slated for future expansion of a Kaiser

Permanente complex and other development. East of the project site is vacant range land similar to the project site.

2.2.1 Climate characteristics

The climate characteristics of the site reflect the Mediterranean climate of central coastal regions of California. This climate regime is characterized by cool, wet winters and hot, dry summers. Table 1 presents climate data from the Antioch Pumping Plant (located 2.3 miles to the north northeast), which illustrates the general seasonal trends at the project site.

The lower elevation areas in eastern Contra Costa County lie within the rain shadow of the coastal mountain ranges that remove much of the moisture from incoming storm systems. The Mean Seasonal Isohyets map prepared by Contra Costa County (CCCPWD, 1977) indicates that the mean seasonal precipitation at the site is on the order of 14 inches per year. Although the average rainfall is quite low, the site does experience the wide range in annual precipitation that accompany drought years and wet years such as those related to the El Niño Southern Oscillation (ENSO). For example, the minimum annual precipitation recorded at the Antioch Pumping Plant was 5.6 inches (in Water Year 1976[1]) and the maximum was 27.1 inches (in Water Year 1983).

Annual temperature patterns are typical of interior areas of the state, although somewhat tempered by cooling breezes originating at sea and in the San Francisco Bay system. Evaporation rates are quite high in summer; exceeding rainfall in all but the wettest winter months. Mean annual pan evaporation is likely on the order of 71 inches, or over five times mean annual precipitation, based on the record from the Antioch Pumping Plant (1955-1978).

2.2.2 Terrain, geology and soils

The Aviano project is located on relatively level land that slopes slightly parallel to the creek with elevations ranging from 201 feet NGVD[2] at the western boundary to 173 feet along the eastern boundary. The slope across the project site is fairly constant at roughly 1 percent. Sand Creek cuts a channel across the southeast corner that ranges from 130 to 230 feet wide with top of slope on the left (north) bank ranging from 181 feet to 174 feet and bed elevations ranging from 157 feet

[1] The water year runs from October to September and is a common reporting basis for rainfall in California. For example, Water Year 1976 ran from October 1975 through September 1976.

[2] Unless otherwise noted, all elevations reference the National Geodetic Vertical Datum of 1929 (NGVD).

to 147 feet over a stream distance of roughly 2050 feet. This is equivalent to a channel slope of less than 0.5 percent. The creek channel crosses approximately 1200 feet of the property in tight meanders.

Three primary soil types are mapped on the project site (Welch, 1977). The soil types present are classified as hydrologic soil groups C and D under the Natural Resources Conservation Service's (NRCS) hydrologic soil group system (HSG).[3] The majority of the project site (72 percent) is underlain by D soils; mainly Capay clay (CaA) with a small area of Altamont clay (AbD) in the far northwestern corner. The southern edge of the residential development, the right-of-way for Sand Creek Road and the left bank area that will include the project stormwater basins is mapped as Rincon clay loam, a C soil. Table 2 and Figure 2 present additional information related to the characteristics and distribution of these soils.

2.2.3 Regional watershed context

Sand Creek is an 18.7 mile long major tributary of Marsh Creek that flows into the main stem of Marsh Creek (CCCCDD, 2003) in the City of Brentwood, roughly 5 miles downstream of the project site. The Sand Creek watershed begins on the northeastern flank of Mt. Diablo in unincorporated County lands and flows in an easterly direction through the City of Antioch in deeply incised natural channels through the upper portion of the alluvial plain that stretches from Mt. Diablo to the Sacramento/San Joaquin River Delta.

2.2.4 Existing drainage patterns

The Aviano project site is located on the north side of Sand Creek with an overall slope of 1 percent parallel to the creek. A drainage ditch along the eastern boundary of the site currently collects runoff from the project site. The ditch also routes stormwater runoff from the 86.4-acre residential development north of the site. The ditch ends in a riprap-armored outfall to Sand Creek approximately 40 feet upstream of the eastern boundary of the property. Beyond the ditch to the east the land surface continues to slope away from the project site. All runoff from areas to the west and northwest of the project site drains via double 84-inch pipes that run along the

[3] The NRCS hydrologic soil groups (HSGs) divide all soil types into four categories on the basis of potential to produce runoff. Type A soils have the lowest runoff potential and typically have high infiltration rates. Type D soils have the highest runoff potential and typically have low infiltration rates and/or are shallow.

western boundary of the Project. These pipes discharge into the County's Upper Sand Creek Regional Flood Control Basin.

2.2.4.1 Ground water

No ground water seeps or other discharges which would contribute to surface flows have been identified on the site. Additionally, ground-water recharge is likely low due to the prevalence of the low permeability, high shrink-swell, clayey soils. Ground water is not considered to be a primary factor in the stormwater management planning for the site because direct infiltration of stormwater is likely infeasible.

2.2.4.2 Regional flood control and hydromodification

As indicated on Contra Costa County Flood Control drainage area figures, the Project lies within Drainage Area 104 (DA104). In discussions with County staff, the proposal to construct stormwater detention basins was questioned. County staff acknowledged that, while the project basins would not be required for flood control purposes under current long-range plans, they may be necessary as an interim measure and/or as water quality features. The current planning at the County level would have the project watershed draining to Sand Creek; with any necessary detention being handled by the Lower Sand Creek Regional Flood Control Basin for the majority of the project watershed. The school site in southwest corner of the property (not part of this project) would drain to the proposed Upper Sand Creek Regional Flood Control Basin which lies directly south of that portion of the site, according to current County plans. County staff has indicated that this alignment could be revisited as plans evolve.

The Project is understood to be subject to flow-control requirements related to hydromodification[4] concerns given its location and its outfall with respect to Sand Creek. The CCCWP Hydrograph Modification Management Plan (HMP) offers four options for compliance with CCCWP flow-control standards. Compliance is discussed further in Section 3.2.5.

[4] The term hydromodification is generally understood to refer to changes in flow regimes (rates and/or durations) where increased runoff would result in increased potential for erosion or other adverse impacts to beneficial uses.

2.3 Opportunities and Constraints

2.3.1 Stormwater management opportunities

There are a number of opportunities available to this project.

- *Preservation of Sand Creek.* The Aviano property presents an opportunity to preserve and enhance a section of Sand Creek that has remained essentially a natural stream to the present. Preservation of the 35-acre area, including the creek corridor and the entire right bank to the property boundary, is integral to the project design.
- *Parks and open space.* The 10-acre PG&E right-of-way through the project site provides a wildlife corridor and helps reduce the directly connected impervious areas of the Project. There are additional park areas within the common areas of the Project, notably 8 foot wide landscaping along the loop road amounting to roughly 2 acres, a 2.4-acre park linked to the west side of the PG&E right-of-way, a 5 acre recreation area of which roughly 3.5 acres are pervious and several smaller pockets of landscaping.
- *Sufficient hydraulic head.* The relief at the site allows stormwater runoff from the developed areas to be routed to, through, and away from treatment controls without pumping.
- *Space for stormwater control basins.* The area within the PG&E right-of-way and south of Sand Creek Road have room to accommodate stormwater basins for hydromodification control, water quality and flood control purposes.
- *Existing outfall to Sand Creek.* The outfall from the existing ditch along the eastern boundary of the Project is ideally located to be utilized for the outfall from the Project's eastern stormwater basin.

2.3.2 Stormwater management constraints

The background information presented in Section 2.2 alluded to several of the most significant constraints with regard to stormwater management at the site. These constraints include:

- *Low soil permeability.* The soils underlying the project site are designated as HSG C and D, indicating very low infiltration potential. This effectively eliminates those BMPs that rely on direct infiltration of stormwater runoff to ground water as a water-quality control measure.
- *Off-site northern watershed.* Drainage from this watershed must be accommodated, along with runoff from the eastern portion of the project site, in the eastern stormwater basin to be routed to the existing discharge point on Sand Creek.
- *Existing stormwater drainage ditch.* The drainage ditch along the east side of the Project conveys runoff from the northern off-site development. The existing ditch may perform a water quality treatment function for this runoff. As a result, the northern off-site drainage is included in the Project's stormwater management strategy.

- *New outfall required for west side drainage.* The storm drain trunk line from the west side of the project site will be routed separately to Sand Creek which will require permitting of an additional outfall.

2.4 Proposed Drainage Patterns

Runoff from the project site will be routed through eight multi-purpose stormwater basins as shown in the C.3 Compliance Exhibit dated April 9, 2008, Figure 3 of this document. These basins will perform hydromodification control, water quality functions and flood control. The west side of the project, roughly 92 acres, is routed to Basins 1 through 3. Basins 1 and 2 each consist of three basins in series (1A through 1C and 2A through 2C) and are located within the PG&E corridor. Basin 3 is located south of Sand Creek Road. Basins 1C, 2C and 3 discharge into a common storm drain which is routed to Sand Creek at a new outfall. The East Basin collects runoff from the east side of the project site, roughly 50 acres, and from the 86.4-acre off-site area to the north. The off-site runoff is collected to provide the water quality function that is performed by the ditch along the eastern boundary of the site in current conditions. The stage/storage relationships used for preliminary modeling of the basins are presented in Table 3. Runoff from the western end of Sand Creek Road on the project site will be routed to Basin 3. Runoff from the eastern end of Sand Creek Road and Hillcrest Avenue will be routed to the East Basin. The location of the existing outfall to Sand Creek will be utilized for the outfall from the East Basin. The existing outfall will be removed and a new one constructed at a lower elevation. The outfalls from the east and west sides are being permitted and are covered in the project mitigation plans.

3. STORMWATER QUALITY MANAGEMENT STRATEGIES

Stormwater management for the Project utilizes the three-tiered, hierarchical approach advocated by stormwater quality regulators (CCCWP, 2006, and BASMAA, 1999). This approach addresses water quality management through site design, source control and treatment control. The project-specific applications of these tiers are described in Sections 3.1, through 3.3. Water-quality challenges at the developed site are typical of those encountered at residential projects. Of primary concern are pollutants deposited in airborne dust, oils and grease from automobiles, nutrients (e.g., nitrogen and phosphorus), litter and trash, heavy metals, and household and lawn care chemicals (e.g., detergents, insecticides, herbicides, fungicides, rodenticides, and fertilizers).

3.1 Measures to Limit Imperviousness

In any development of previously open land, there will be an increase in impervious surfaces. This results in more runoff both in terms of total volume and rates. The minimization of directly connected impervious areas (DCIAs) reduces this effect. Thus the primary goal of water-quality sensitive site design is to limit the amount of DCIA within the development envelope. Limiting DCIA promotes infiltration (though modestly in areas with low permeability), increases times of concentration within sub-basins and reduces runoff volumes. Additionally, reducing impervious areas leads to increased space available for landscaping and vegetated open space which limits the introduction of pollutants to the environment and can filter out pollutants that already have been mobilized.

3.1.1 Measures to cluster development and protect natural resources

The project site plan clusters development in two lobes in the northern portion of the property; leaving the right bank of Sand Creek in its existing (natural) state. The two lobes are separated by the PG&E right-of-way which will remain as open space where not used to site the proposed stormwater basins (Basins 1 and 2). Additional buffering of natural habitat is provided on the left bank by locating all housing north of Sand Creek Road. The left bank area south of Sand Creek Road will remain as open space where not used to site the proposed stormwater basins (Basin 3 and East Basin).

3.1.2 Measures used to limit directly connected impervious area

A number of measures were taken to limit the impervious areas and connection between impervious areas.

3.1.2.1 Site design features

The site design structured around the location of the creek, the infrastructure roadways and the PG&E right-of-way contains the following elements that will limit DCIAs.

- *Open space, parks and landscaping*. By far the most important design measure is that much of the property area will remain as pervious open space. Of the 200-acre property, roughly 70 acres will be open space or parks. The individual lot landscaping will increase this number resulting in roughly 50 percent of the project site and over 55 percent of the property devoted to pervious features.
- *Landscaping*. Much of the runoff from impervious areas will drain through vegetated areas (e.g. lawns and turf) before being routed to the storm drains. Although these vegetated areas may not allow complete infiltration of runoff from impervious areas, they can provide "pre-treatment" of storm water and reduce peak flows.

3.1.2.2 Pervious pavement

The Project is still in preliminary stages of design. As part of the finalization of the design, opportunities to include pervious pavement surfaces (including paver blocks) will be investigated and included where practical.

3.1.2.3 Detention and drainage design

The multi-purpose basins and outlets are sized to perform water quality function as well as hydromodification and flood control. The basins and outlets are discussed in detail in Section 3.2.2. In addition to the planned basins, bioretention swales may be located within the park areas where feasible.

3.1.3 Summary of pervious and self-retaining areas

Pervious areas on the property will include 35 acres of open space including the Sand Creek corridor and the right bank, outside of the development envelope, 15 acres on the left bank and approximately 20 acres of open space and parks within the residential area. The overall pervious acreage will be roughly 50 percent of the 142-acre watershed areas including the project site and the adjacent portions of Hillcrest Avenue and Sand Creek Road as shown in Figure 3.

3.2 Selection and Preliminary Design of Treatment and Flow-Control Facilities

Based on the nature of the site, multi-purpose stormwater basins have been selected as the most appropriate treatment and flow control BMP. The basins and outlets have been sized to provide hydromodification control in addition to water quality and flood control.

3.2.1 Locations and elevations

The eight multi-purpose basins are located within the PG&E right-of-way and south of Sand Creek Road as described in Section 2.4 above. Details of the elevations, stage-storage and outlet design for each basin is shown in Table 3. Figure 3 shows the location of each basin and its contributing watershed.

3.2.2 Sizing calculations

The sizing requirements for water quality treatment were determined using the CCCWP C.3 BMP Sizing Worksheet. As shown in Figure 3, Basins 1 through 3 receive runoff from all areas west of the PG&E right-of-way and from the right-of-way itself. The East Basin drainage area contains much of the additional open space and parks including the central recreation area. Both the west and east areas are assumed to be a net 50 percent pervious. The north off-site area is also assumed to be a net 50 percent pervious. The completed worksheets are included here in Appendix A. The Basin 1, 2 and 3 drainage areas will require water quality volume of 0.94, 0.71, and 0.74 acre-feet respectively. The on-site East Basin drainage area (including Hillcrest Avenue) will require a water quality volume of 1.31 acre-feet, while the off-site northern area will require a water quality volume of 2.26 acre-feet, totaling 3.57 acre-feet of water quality volume in the East Basin.

The HEC-HMS platform was used to evaluate the basins for their ability to handle the flood control detention function using CCCFCD flood hydrographs from the County Hydro-6 model. Appendix B contains the Hydro-6 output. The HEC-HMS model was run along with a full 30-year HSPF model to optimize basin and outlet sizing to serve both hydromodification control and flood control. The output of the two models is provided in Appendices C and D respectively. Further discussion of these models is found in Sections 3.2.4 Flood Control and 3.2.5 Hydromodification Control.

3.2.3 Summary of impervious areas and treatment / flow-control facilities

Runoff from the project impervious areas as well as excess runoff from pervious areas will be routed to the multi-purpose stormwater basins as described in Section 2.4. The west basin footprints (basins 1A, 1B, 1C, 2A, 2B, 2C and 3) will cover roughly 5 acres. The East Basin is constrained by the location of Sand Creek Road relative to Sand Creek and its buffer zone, and covers roughly 2 acres.

3.2.4 Flood control

The 100-year 12-hour storm event was used as the design storm for flood control purposes. This event was selected to coincide with County models of the Marsh Creek system (including Sand Creek as a major tributary). County hydrologists have provided flows in Sand Creek for this storm in the current conditions (prior to completion of the Upper Sand Creek Regional Flood Control Basin). The project basins are configured to provide detention storage with the required 2 feet of freeboard so that peak discharge into Sand Creek is not increased; nor is the peak flow in Sand Creek downstream of the project outfalls increased over current conditions, in fact the model shows that the post-project peak flow in Sand Creek at Aviano will be 7.6 cfs lower than with existing conditions. The pre-project model, using the CCCFCD interim hydrograph for Sand Creek and the pre-project Hydro-6 output for the Aviano site and the northern off-site area, shows a peak flow of 3,054.2 cfs downstream of the Aviano project site and the existing drainage ditch. The post-project model shows a peak flow of 3,046.6 cfs at the same location immediately downstream of the Aviano outfalls. Runoff hydrographs from the County Hydro-6 program were prepared for both the pre-project and post-project conditions. These hydrographs, along with the Sand Creek hydrograph were entered into the HMS model. Table 4 presents peak discharge and freeboard for each basin and peak discharge in Sand Creek.

3.2.5 Hydromodification control

As discussed in previous sections, the Project addresses the hydrograph modification management standard put forth in the CCCWP HMP (CCCWP, 2005). Attachment 1 of the HMP presents four options for demonstrating compliance with the hydrograph modification management standard. Option 3 calls for a continuous-simulation hydrologic model such as the USEPA's Hydrologic Simulation Program – Fortran (HSPF) and lays out the criteria required of such modeling. The guidelines reiterated in Appendix D of the Stormwater C.3 Guidebook (CCCWP, 2006) state:

> For flow rates from 10% of the pre-project 2-year runoff event (0.1Q2) to the pre-project 10-year runoff event (Q10), the post-project discharge rates and durations shall not deviate above the pre-project rates and durations by more than 10% over more than 10% of the length of the flow duration curve.
>
> For flow rates from 0.5Q2 to Q2, the post project peak flows shall not exceed pre-project peak flows. For Flow rates from Q2 to Q10, post-project peak flows may exceed pre-project flows by up to 10% for a 1-year frequency interval.

The HSPF model prepared for the Project demonstrates that post-project runoff peak flow rates and durations are in compliance with the C.3 guidelines in the ranges specified. Figure 4 presents the peak flow frequency statistics of pre- and post-project flows in the range of flows from the pre-project 0.5 Q2 to Q10. As shown in the figure, the post-project discharges do not exceed pre-project discharges in this range. Figure 5 present the flow duration statistics and again, the post-project does not exceed the pre-project discharges by more than 10% over more than 10% of the curve in the range between 0.1Q2 and Q10.

3.3 Source Control Measures

3.3.1 Description of site activities and potential sources of pollutants

Control of pollutant sources limits the release of pollutants into the stormwater system and serves an important early role in reducing urban pollutants. This single family residential project has the following potential sources of stormwater pollutants:

- Dumping of wash water or other pollutants into storm drain inlets;
- Pesticides used for indoor or structural pest control;
- Fertilizer, pesticide and herbicides use for maintenance of parks, and residential yards and gardens;
- Nutrient loading from household pets;
- Vehicle washing; and
- Other vehicle related pollutants such as heavy metals, oil and grease.

3.3.2 Tabulation of sources and permanent source controls

Measures to limit pollutant sources are summarized in Table 5. In addition to maintenance activities such as regular street sweeping and cleaning of storm drain inlets, the storm drain inlets within the Project will be stenciled with "Drains to Sand Creek" or similar text. Educational materials will be provided to assist homeowners in minimizing the introduction of pollutants to the stormwater management system through proper disposal of waste, responsible use of lawn and garden care products, and dry storage of potentially contaminating items such as lawn mowers.

3.3.3 List of operational source control BMPs

Operational source control BMPs are also listed in Table 5. The Common Area Operations and Maintenance Plan (OMP) will include instructions for the proper application of fertilizer, pesticides and herbicides. It will also include instructions for the periodic inspection and cleaning

of stormdrain inlets. The Basin OMP will contain similar instructions as well as instructions regarding mosquito abatement and detailed instructions regarding inspection and maintenance for structural integrity of the basins and outlet facility.

4. SUMMARY OF PERMITTING AND CODE COMPLIANCE ISSUES

There are no known conflicts between the proposed SWCP and the City of Antioch ordinances or policies. Any conflicts that are found will be resolved through the design review process or during subsequent permitting.

5. FACILITY MAINTENANCE REQUIREMENTS

Regular maintenance is necessary to preserve the effectiveness of BMPs and prevent flooding or other harmful nuisances. As stated in Section 3.3.3, details of maintenance and funding for the multi-use stormwater basins will be provided in the Basin OMP.

5.1 Ownership and responsibility for maintenance in perpetuity

The stormwater basins and other BMPs will be owned, maintained and operated by the developer until such time as the facilities are dedicated to the City of Antioch. Maintenance in perpetuity will be the responsibility of the Landscape and Lighting District.

5.1.1 Commitment to execute any necessary agreements

The applicant will submit a draft Stormwater Facilities Operations and Maintenance Plan including detailed maintenance requirements and a maintenance schedule for the stormwater basins and other facilities as appropriate to the final design.

5.1.2 Statement accepting responsibility for operation and maintenance of facilities until that responsibility is formally transferred

The applicant accepts responsibility for interim operation and maintenance of the facilities until such time as this responsibility is formally transferred to the City for ownership and the Landscape and Lighting District for maintenance.

5.2 Summary of Maintenance Requirements for Each BMP

A complete listing of maintenance requirements will be included in future revisions of the SWCP.

6. CONSTRUCTION PLAN C.3 CHECKLIST

The check list will be provided in future revisions of the SWCP.

7. CERTIFICATION

The selection, size and preliminary design of treatment BMPs and other control measures for the Project will meet the requirements of the City of Antioch, the Contra Costa Clean Water Program and the Central Valley Regional Water Quality Control Board NPDES permit issued for the City and CCCWP. Annual compliance certificates for the stormwater management facilities operations and maintenance will be obtained as required by the City of Antioch Municipal Code Section 6-9.10.

8. LIMITATIONS

This report was prepared in general accordance with the accepted standard of practice in surface-water hydrology and stormwater management existing in Northern California for projects of similar scale at the time the investigations were performed. No other warranties, expressed or implied, are made.

We have used standard environmental information such as rainfall, topographic mapping, and soil mapping in our analyses and approaches without verification or modification, in conformance with local custom. New information or changes in regulatory guidance could influence the plans or recommendations, perhaps fundamentally. As updated information becomes available, the interpretations and recommendations contained in this report may warrant change. To aid in revisions, we ask that readers or reviewers advise us of new plans, conditions, or data of which they are aware.

Concepts, findings, interpretations and recommendations contained in this report are intended for the exclusive use at the Aviano project site under the conditions presently prevailing except where noted otherwise. Their use beyond the boundaries of the site could lead to environmental or structural damage, and/or to noncompliance with water-quality policies, regulations or permits.

9. REFERENCES

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Contra Costa Clean Water Program (CCCWP), 2005, Hydrograph Modification Management Plan, May 15, 2005 with minor correction of April 19, 2006, 16 p. plus attachments.

Contra Costa Clean Water Program (CCCWP), 2006, Stormwater C.3 Guidebook, 3rd Edition, October 2006, 84 p. plus appendices and attachments.

Contra Costa County Community Development Department (CCCCDD), 2003, Contra Costa County Watershed Atlas, prepared in cooperation with the Contra Costa County Public Works Department, 151 p.

Contra Costa County Public Works Department (CCCPWD), 1977, Mean seasonal isohyets compiled from seasonal data 1879-1973, 1 sheet.

Water Environment Federation and the American Society of Civil Engineers (WEF and ASCE), 1998, Urban runoff quality management, WEF manual of practice no. 23, ASCE manual and report on engineering practice no. 87: pages 175-178.

Welch, Lawrence E., 1977, Soil Survey of Contra Costa County, California. U.S. Department of Agriculture, Washington, D.C. 122 p. + appendices.

Table 1. Historical precipitation and pan evaporation at the Antioch Pumping Plant, Contra Costa County, California

Month	Precipitation *(inches)*	Pan Evaporation *(inches)*
October	0.71	4.91
November	1.69	2.07
December	1.80	1.21
January	2.76	1.17
February	2.43	1.99
March	1.96	4.25
April	0.88	6.27
May	0.39	8.96
June	0.10	10.84
July	0.03	11.60
August	0.04	10.06
September	0.23	7.77
Mean	**12.91** Water Year Basis	**70.99**

Notes:

These values are presented to illustrate the relative monthly distribution of total rainfall and evaporation. Monthly and yearly values at the Aviano project site will differ from these values, with precipitation roughly 8 percent higher, reflecting the slightly higher mean annual precipitaton at the project site (14 inches versus 12.9 inches at the Pumping Plant). This gage located at latitude N37°59' and longitude W121°44' is approximately 2.3 miles north northeast of the project site.

Values for precipitation are from the record for the period from March 1955 to December 2000 with several months missing data.

Values for pan evaporation are for the period from March 1955 to July 1978 with several months missing data.

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TABLES

Table 2. Soil properties and distribution at and near the Aviano project, City of Antioch, California

Map Symbol	Soil Series	Hydrologic Soil Group	% of project site	Erosion Hazard	Depth Zone	USCS	Atterberg Limits		Permeability	Available Water Capacity		Reaction	Shrink-swell potential
							Liquid	Plastic		Per Inch	Profile		
			(%)		(in)				(in/hr)	(in./in. of soil)	(total, in)	(pH)	
AbD	Altamont clay	D	8%	slight to moderate	0 - 48	CL	40-50	25-30	0.06 - 0.2	0.16 - 0.18	8.2	6.6 - 8.4	High
CaA	Capay clay	D	64%	none	0 - 60	CL	40-50	25-30	0.06 - 0.2	0.14 - 0.17	9.3	6.6 - 8.4	High
RbA	Rincon clay loam	C	28%	none or slight	0 - 12	CL	30-40	15-20	0.2 - 0.6	0.17 - 0.19	2.2	6.1 - 7.8	Moderate
	clay				12 - 29	CL	35-45	20-25	0.06 - 0.2	0.14 - 0.17	2.6	6.6 - 8.4	High
	silty clay loam				29 - 65	CL	25-35	10-20	0.2 - 0.6	0.15 - 0.17	5.8	7.9 - 8.4	Moderate

Notes:
1) Information taken from the most-recent USDA soil survey for the area.
2) This soil survey generally does not distinguish areas smaller than about 20 to 40 acres, so that wetlands, alluvium, or swale fills smaller than 20 acres will not be mapped.
3) USCS = Unified Soils Classification System, commonly used in geotechnical or soil-foundation investigations, and in routine engineering geologic logging.
4) Available water capacity is the held water available for use by most plants, usually defined as the difference between the amount of soil water at field capacity (one day of drainage after a rain or recharge event) and the amount at the wilting point.

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Table 3. Stage/storage relationships for stormwater basins, Aviano project, City of Antioch

Basin 1A

	O1		O2		Riser
Orifice width	0.75	Weir width	14.00	Rim elev	
Orifice height	0.50			Diameter	
Orifice flowline	180.0	Weir flowline	183.6		

Water-quality volume 0.94 ac-ft

Elev	Depth	Area	Storage	O1 Flow Area	O1 Head	O1 Q	O2 Flow Area	O2 Head	weir Q	Riser Q	Q Total
ft		ac	ac-ft	ft2	ft	ft^3/s	ft2	ft	ft^3/s	ft^3/s	ft^3/s
180.0	0	0.38	0.00	0.00	0.00	0.0	0.00	0.00	0.0	0.0	0.00
181.0	1	0.44	0.41	0.38	0.75	1.6	0.00	0.00	0.0	0.0	1.56
182.0	2	0.49	0.87	0.38	1.75	2.4	0.00	0.00	0.0	0.0	2.39
183.0	3	0.55	1.39	0.38	2.75	3.0	0.00	0.00	0.0	0.0	2.99
183.6	3.6	0.59	1.74	0.38	3.35	3.3	0.00	0.00	0.0	0.0	3.30
184.0	4	0.62	1.98	0.38	3.75	3.5	0.00	0.40	10.6	0.0	14.12
185.0	5	0.68	2.63	0.38	4.75	3.9	0.00	1.40	69.6	0.0	73.51
186.0	6	0.75	3.34	0.38	5.75	4.3	0.00	2.40	156.2	0.0	160.49
186.5	6.5	0.79	3.73	0.38	6.25	4.5	0.00	2.90	207.4	0.0	211.93

Basin 1B

	O1		O2		Riser
Orifice width	0.20	Orifice width	1.00	Rim elev	
Orifice height	0.20	Orifice height	0.75	Diameter	
Orifice flowline	176.0	Orifice flowline	179.5		

Water-quality volume: contained in B1A

Elev	Depth	Area	Storage	O1 Flow Area	O1 Head	O1 Q	O2 Flow Area	O2 Head	O2 Q	Riser Q	Q Total
ft		ac	ac-ft	ft2	ft	ft^3/s	ft2	ft	ft^3/s	ft^3/s	ft^3/s
176.0	0	0.38	0.00	0.00	0.00	0.0	0.00	0.00	0.0	0.0	0.00
177.0	1	0.43	0.41	0.04	0.90	0.2	0.00	0.00	0.0	0.0	0.18
178.0	2	0.58	0.91	0.04	1.90	0.3	0.00	0.00	0.0	0.0	0.27
179.0	3	0.66	1.53	0.04	2.90	0.3	0.00	0.00	0.0	0.0	0.33
179.5	3.5	0.70	1.87	0.04	3.40	0.4	0.00	0.00	0.0	0.0	0.36
180.0	4	0.74	2.24	0.04	3.90	0.4	0.38	0.50	1.1	0.0	1.44
180.5	4.5	0.79	2.62	0.04	4.40	0.4	0.75	0.63	2.9	0.0	3.26
181.0	5	0.83	3.02	0.04	4.90	0.4	0.75	1.13	3.8	0.0	4.26
181.5	5.5	0.87	3.45	0.04	5.40	0.4	0.75	1.63	4.6	0.0	5.05
182.0	6	0.92	3.89	0.04	5.90	0.5	0.75	2.13	5.3	0.0	5.73
183.0	7	1.00	4.85	0.04	6.90	0.5	0.75	3.13	6.4	0.0	6.89
183.5	7.5	1.05	5.37	0.04	7.40	0.5	0.75	3.63	6.9	0.0	7.40

Basin 1C

	O1		O2		Riser	
Orifice width	0.15	Orifice width	0.33	Rim elev	180.5
Orifice height	0.15	Orifice height	0.33	Diameter	36
Orifice flowline	175.0	Orifice flowline	178.0		

Water-quality volume: contained in B1A

Elev	depth	area	Storage	O1 Flow Area	O1 Head	O1 Q	O2 Flow Area	O2 Head	O2 Q	Riser Q	Q Total
ft	ft	ac	ac-ft	ft2	ft	ft^3/s	ft2	ft	ft^3/s	ft^3/s	ft^3/s
175.0	0	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0	0.00
176.0	1	0.13	0.12	0.02	0.93	0.10	0.00	0.00	0.00	0.0	0.10
177.0	2	0.16	0.27	0.02	1.93	0.15	0.00	0.00	0.00	0.0	0.15
178.0	3	0.20	0.45	0.02	2.93	0.19	0.00	0.00	0.00	0.0	0.19
179.0	4	0.23	0.66	0.02	3.93	0.21	0.11	0.84	0.48	0.0	0.69
179.5	4.5	0.25	0.78	0.02	4.43	0.23	0.11	1.34	0.61	0.0	0.83
180.0	5	0.27	0.91	0.02	4.93	0.24	0.11	1.84	0.71	0.0	0.95
180.5	5.5	0.29	1.05	0.02	5.43	0.25	0.11	2.34	0.80	0.0	1.05
181.0	6	0.31	1.20	0.02	5.93	0.26	0.11	2.84	0.88	12.3	13.45
182.0	7	0.35	1.52	0.02	6.93	0.29	0.11	3.84	1.03	35.5	36.81
182.5	7.5	0.37	1.70	0.02	7.43	0.30	0.11	4.34	1.09	40.0	41.39

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Table 3. Stage/storage relationships for stormwater basins, Aviano project, City of Antioch

Basin 2A

	O1		O2		Riser	
Orifice width	0.75	Orifice width	4.00	Rim elev		
Orifice height	0.75	Orifice height	2.00	Diameter		
Orifice flowline	173.0	Orifice flowline	177.5			

Water-quality volume 0.71 ac-ft

				O1			O2			Riser	
Elev	Depth	Area	Storage	Flow Area	Head	Q	Flow Area	Head	Q	Q	Q Total
ft		*ac*	*ac-ft*	*ft2*	*ft*	*ft³/s*	*ft2*	*ft*	*ft³/s*	*ft³/s*	*ft³/s*
173.0	0	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.00
174.0	1	0.15	0.14	0.56	0.63	2.14	0.00	0.00	0.0	0.0	2.1
175.0	2	0.18	0.31	0.56	1.63	3.45	0.00	0.00	0.0	0.0	3.5
176.0	3	0.22	0.51	0.56	2.63	4.39	0.00	0.00	0.0	0.0	4.4
177.0	4	0.25	0.74	0.56	3.63	5.16	0.00	0.00	0.0	0.0	5.2
177.5	4.5	0.27	0.87	0.56	4.13	5.50	0.00	0.00	0.0	0.0	5.5
178.0	5	0.29	1.01	0.56	4.63	5.82	2.00	0.50	4.2	0.0	10.1
179.0	6	0.33	1.32	0.56	5.63	6.42	6.00	1.50	22.0	0.0	28.5
180.0	7	0.37	1.67	0.56	6.63	6.97	8.00	1.50	47.2	0.0	54.1
180.5	7.5	0.39	1.86	0.56	7.13	7.23	8.00	2.00	54.5	0.0	61.7

Basin 2B

	O1		O2		Riser	
Orifice width	0.20	Orifice width	2.00	Rim elev		
Orifice height	0.20	Orifice height	2.00	Diameter	0	
Orifice flowline	172.0	Orifice flowline	175.0			

Water-quality volume contained in B2A

				O1			O2			Riser	
Elev	Depth	Area	Storage	Flow Area	Head	Q	Flow Area	Head	Q	Q	Q Total
ft		*ac*	*ac-ft*	*ft2*	*ft*	*ft³/s*	*ft2*	*ft*	*ft³/s*	*ft³/s*	*ft³/s*
172.0	0	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.00
173.0	1	0.11	0.10	0.04	0.90	0.18	0.00	0.00	0.0	0.0	0.18
174.0	2	0.14	0.22	0.04	1.90	0.27	0.00	0.00	0.0	0.0	0.27
175.0	3	0.17	0.37	0.04	2.90	0.33	0.00	0.00	0.0	0.0	0.33
176.0	4	0.20	0.56	0.04	3.90	0.38	2.00	1.00	6.0	0.0	6.38
177.0	5	0.23	0.77	0.04	4.90	0.43	4.00	1.00	19.3	0.0	19.69
178.0	6	0.27	1.02	0.04	5.90	0.47	4.00	2.00	27.2	0.0	27.71
179.0	7	0.31	1.31	0.04	6.90	0.51	4.00	3.00	33.4	0.0	33.87
179.5	7.5	0.33	1.47	0.04	7.40	0.52	4.00	3.50	36.0	0.0	36.56

Basin 2C

	O1		O2		Riser	
Orifice width	0.20	Orifice width	1.00	Rim elev	174.7	
Orifice height	0.20	Orifice height	0.50	Diameter	48	
Orifice flowline	171.0	Orifice flowline	173.0			

Water-quality volume contained in B2A

					O1			O2			Riser	
Elev	depth	area	Storage	Flow Area	Head	Q	Flow Area	Head	Q	Q	Q Total
ft	*ft*	*ac*	*ac-ft*	*ft2*	*ft*	*ft³/s*	*ft2*	*ft*	*ft³/s*	*ft³/s*	*ft³/s*
171.0	0	0.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0	0.00
172.0	1	0.30	0.27	0.04	0.90	0.18	0.00	0.00	0.00	0.0	0.18
173.0	2	0.36	0.59	0.04	1.90	0.27	0.00	0.00	0.00	0.0	0.27
173.5	2.5	0.39	0.78	0.04	2.40	0.30	0.50	0.25	1.20	0.0	1.50
174.0	3	0.42	0.98	0.04	2.90	0.33	0.50	0.75	2.08	0.0	2.41
174.7	3.7	0.47	1.29	0.04	3.60	0.37	0.50	1.45	2.90	0.0	3.26
175.0	4	0.48	1.43	0.04	3.90	0.38	0.50	1.75	3.18	8.1	11.67
176.0	5	0.55	1.95	0.04	4.90	0.43	0.50	2.75	3.99	54.4	58.82
177.0	6	0.62	2.53	0.04	5.90	0.47	0.50	3.75	4.66	77.1	82.23

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Table 3. Stage/storage relationships for stormwater basins, Aviano project, City of Antioch

Basin 3

	O1		O2		Riser	
Orifice width	0.15	Orifice width	0.33	Rim elev	178.4
Orifice height	0.15	Orifice height	0.33	Diameter	36
Orifice flowline	172.0	Orifice flowline	176.0		

Water-quality volume 0.74 ac-ft

Elev	Depth	Area	Storage	O1 Flow Area	O1 Head	O1 Q	O2 Flow Area	O2 Head	O2 Q	Riser Q	Q Total
ft		ac	ac-ft	ft2	ft	ft^3/s	ft2	ft	ft^3/s	ft^3/s	ft^3/s
172.0	0	0.50	0.00	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.00
173.0	1	0.57	0.53	0.02	0.93	0.10	0.00	0.00	0.0	0.0	0.10
174.0	2	0.64	1.13	0.02	1.93	0.15	0.00	0.00	0.0	0.0	0.15
175.0	3	0.71	1.81	0.02	2.93	0.19	0.00	0.00	0.0	0.0	0.19
176.0	4	0.79	2.56	0.02	3.93	0.21	0.00	0.00	0.0	0.0	0.21
177.0	5	0.87	3.39	0.02	4.93	0.24	0.11	0.84	0.5	0.0	0.72
177.7	5.7	0.93	4.02	0.02	5.63	0.26	0.11	1.54	0.6	0.0	0.91
178.0	6	0.95	4.30	0.02	5.93	0.26	0.11	1.84	0.7	0.0	0.97
178.4	6.4	0.99	4.69	0.02	6.33	0.27	0.11	2.24	0.8	0.0	1.06
179.0	7	1.04	5.29	0.02	6.93	0.29	0.11	2.84	0.9	15.6	16.77
180.0	8	1.12	6.37	0.02	7.93	0.30	0.11	3.84	1.0	36.5	37.83
180.5	8.5	1.17	6.94	0.02	8.43	0.31	0.11	4.34	1.1	41.1	42.51

East Basin

	O1		O2		Riser	
Orifice width	0.20	Orifice width	1.00	Rim elev	168.5
Orifice height	0.20	Orifice height	0.75	Diameter	60
Orifice flowline	157.0	Orifice flowline	164.0		

Water-quality volume 3.58 ac-ft, per calculations in HMS folder for March 2008 work

Elev	Depth	Area	Storage	O1 Flow Area	O1 Head	O1 Q	O2 Flow Area	O2 Head	O2 Q	Q	Q Total
ft		ac	ac-ft	ft2	ft	ft^3/s	ft2	ft	ft^3/s	ft^3/s	ft^3/s
157.00	0	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.00
158.0	1	0.18	0.12	0.04	0.90	0.18	0.00	0.00	0.0	0.0	0.18
159.0	2	0.43	0.42	0.04	1.90	0.27	0.00	0.00	0.0	0.0	0.27
160.0	3	0.52	0.89	0.04	2.90	0.33	0.00	0.00	0.0	0.0	0.33
161.0	4	0.61	1.45	0.04	3.90	0.38	0.00	0.00	0.0	0.0	0.38
162.0	5	0.71	2.11	0.04	4.90	0.43	0.00	0.00	0.0	0.0	0.43
163.0	6	0.81	2.87	0.04	5.90	0.47	0.00	0.00	0.0	0.0	0.47
164.0	7	0.91	3.74	0.04	6.90	0.51	0.00	0.00	0.0	0.0	0.51
165.0	8	1.02	4.70	0.04	7.90	0.54	0.75	0.63	2.9	0.0	3.40
166.0	9	1.13	5.77	0.04	8.90	0.57	0.75	1.63	4.6	0.0	5.18
167.0	10	1.24	6.95	0.04	9.90	0.61	0.75	2.63	5.9	0.0	6.46
167.5	10.5	1.29	7.59	0.04	10.40	0.62	0.75	3.13	6.4	0.0	7.00
168.5	11.5	1.41	8.93	0.04	11.40	0.65	0.75	4.13	7.3	0.0	7.98
169.0	12	1.46	9.65	0.04	11.90	0.66	0.75	4.63	7.8	21.7	30.13
170.0	13	1.58	11.18	0.04	12.90	0.69	0.75	5.63	8.6	88.2	97.46
171.0	14	1.70	12.82	0.04	13.90	0.72	0.75	6.63	9.3	127.2	137.21
171.5	14.5	1.76	13.68	0.04	14.40	0.73	0.75	7.13	9.6	147.2	157.57

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Table 4. HMS model output for the 100-year 12-hour design storm, Aviano project, City of Antioch, California

Overall summary of peak discharges

Point of Concentration	Peak Discharge (cfs)		
	Pre-project	Post-project	Change
Flow to Sand Creek from Aviano[1]	199.9	88.4	-111.5
Sand Creek downstream of Aviano[2]	3,054.2	3,046.6	-7.6

Summary of output by stormwater basin

Stormwater Basin	Peak Elevation *(ft NGVD)*	Available Freeboard *(ft)*	Peak Storage *(ac-ft)*	Peak Discharge *(cfs)*
1A	184.5	2.0	2.3	42.5
1B	181.5	2.0	3.5	5.1
1C	180.7	2.0	1.1	5.0
Total Drainage Area 1			6.9	
2A	179.0	2.0	1.3	29.5
2B	177.5	2.0	0.9	23.4
2C	175.1	2.0	1.5	18.4
Total Drainage Area 2			3.7	
3	178.5	2.0	4.8	3.0
Total Western Outfall[3]	(Drainage areas 1 + 2 + 3)		15.4	19.3
East	169.8	2.0	10.9	85.1
Total Project[4]	(western outfall + eastern outfall)		26.3	88.4

Notes:

1 Flow from Aviano includes existing development north of the project in all cases. Pre-project flow detention in the existing ditch is accounted for in the modeling.
2 Peak flow reductions in Sand Creek are less than overall reductions from Aviano due to differences in the timing of peak flow rates.
3 Peak flow from the western outfall is less than the peak discharge from each drainage area due to differences in the timing of peak flow rates.
4 Peak flow from the project is less than the peak discharge from each outfall due to differences in the timing of peak flow rates.

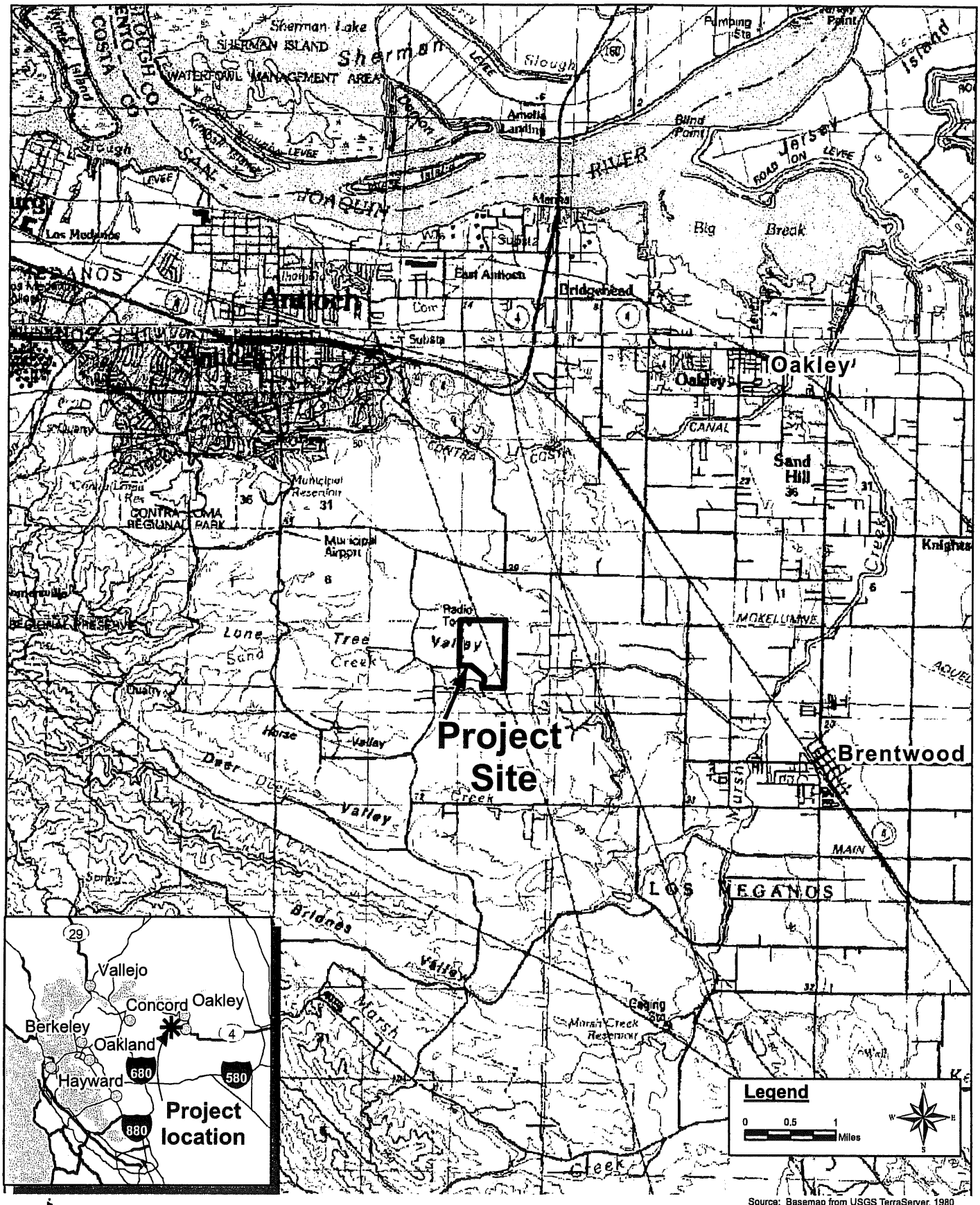
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Table 5. Sources of potential pollutants and source control BMPs, Aviano Project, City of Antioch, California

Potential source	Permanent BMPs	Operational BMPs
On-site dumping into storm drain inlets	All accessible inlets will be marked with the words "No Dumping! Drains to Sand Creek" or similar wording	Markings will be periodically repainted or replaced Inlets and pipes conveying stormwater to the basins will be inspected and maintained as part of the Common Area OMP Provide stormwater pollution prevention information to new site homeowners
Indoor and structural pest control		Provide Integrated Pest Management (IPM) information to owners, lessees, and operators.
Landscape / outdoor pesticide use	Final Landscape plans will: Preserve existing native trees, shrubs, and ground cover to the maximum extent possible Minimize irrigation and runoff and promote infiltration where appropriate Minimize the use of fertilizers and pesticides Use pest-resistant plants, especially adjacent to hardscape, when possible Use plantings appropriate to the site soils, slopes, climate, sun, wind land use, air movement, ecological consistency, and plant interactions.	Landscape will be maintained using minimum or no pesticides. IPM information will be provided to new homeowners.
Vehicle washing		Stormwater pollution prevention information will be distributed to homeowners

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FIGURES



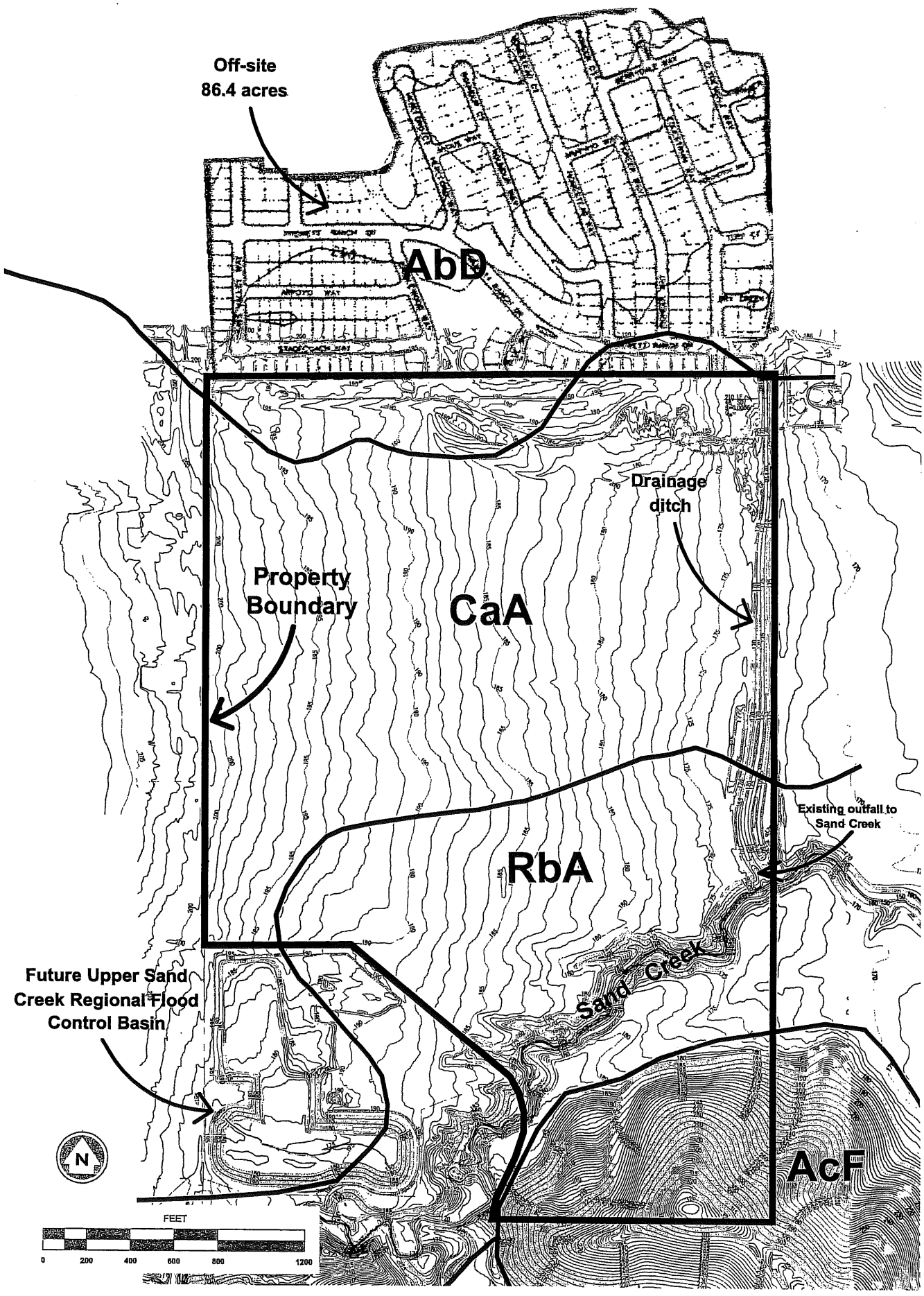
Source: Basemap from USGS TerraServer, 1980

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Figure 1 . Location map of the Aviano project, City of Antioch, Contra Costa County, California

206040_location_map.mxd

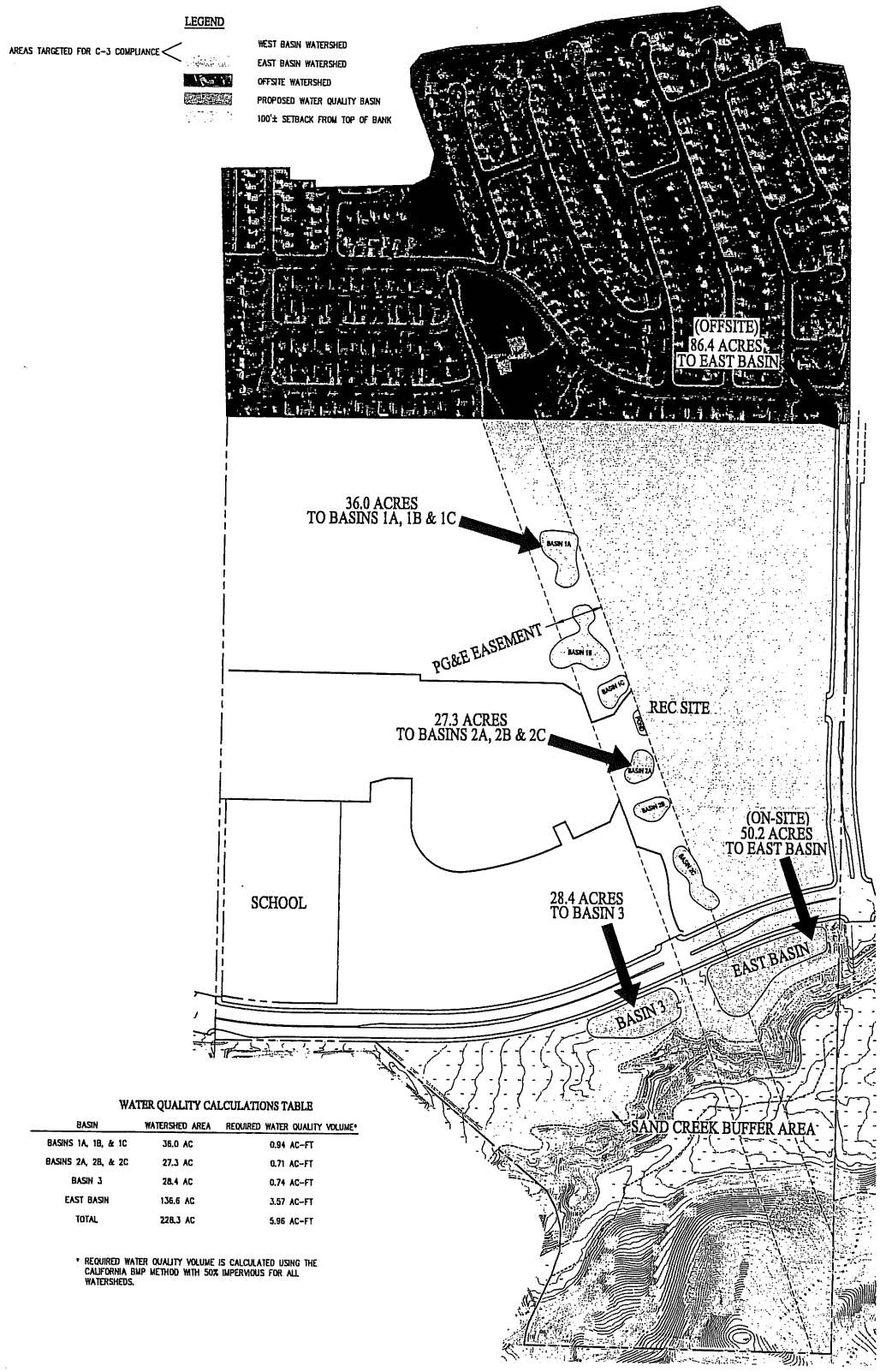
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Base files provided by Carlson Barbee & Gibson, Inc.

Balance Hydrologics, Inc.

Figure 2. Existing topography and soils distribution, Aviano project, City of Antioch, California.



WATER QUALITY CALCULATIONS TABLE

BASIN	WATERSHED AREA	REQUIRED WATER QUALITY VOLUME*
BASINS 1A, 1B, & 1C	36.0 AC	0.94 AC-FT
BASINS 2A, 2B, & 2C	27.3 AC	0.71 AC-FT
BASIN 3	28.4 AC	0.74 AC-FT
EAST BASIN	136.6 AC	3.57 AC-FT
TOTAL	228.3 AC	5.96 AC-FT

* REQUIRED WATER QUALITY VOLUME IS CALCULATED USING THE CALIFORNIA BMP METHOD WITH 50% IMPERVIOUS FOR ALL WATERSHEDS.

C-3 COMPLIANCE EXHIBIT

Pulte

Figure 3.

AVIANO

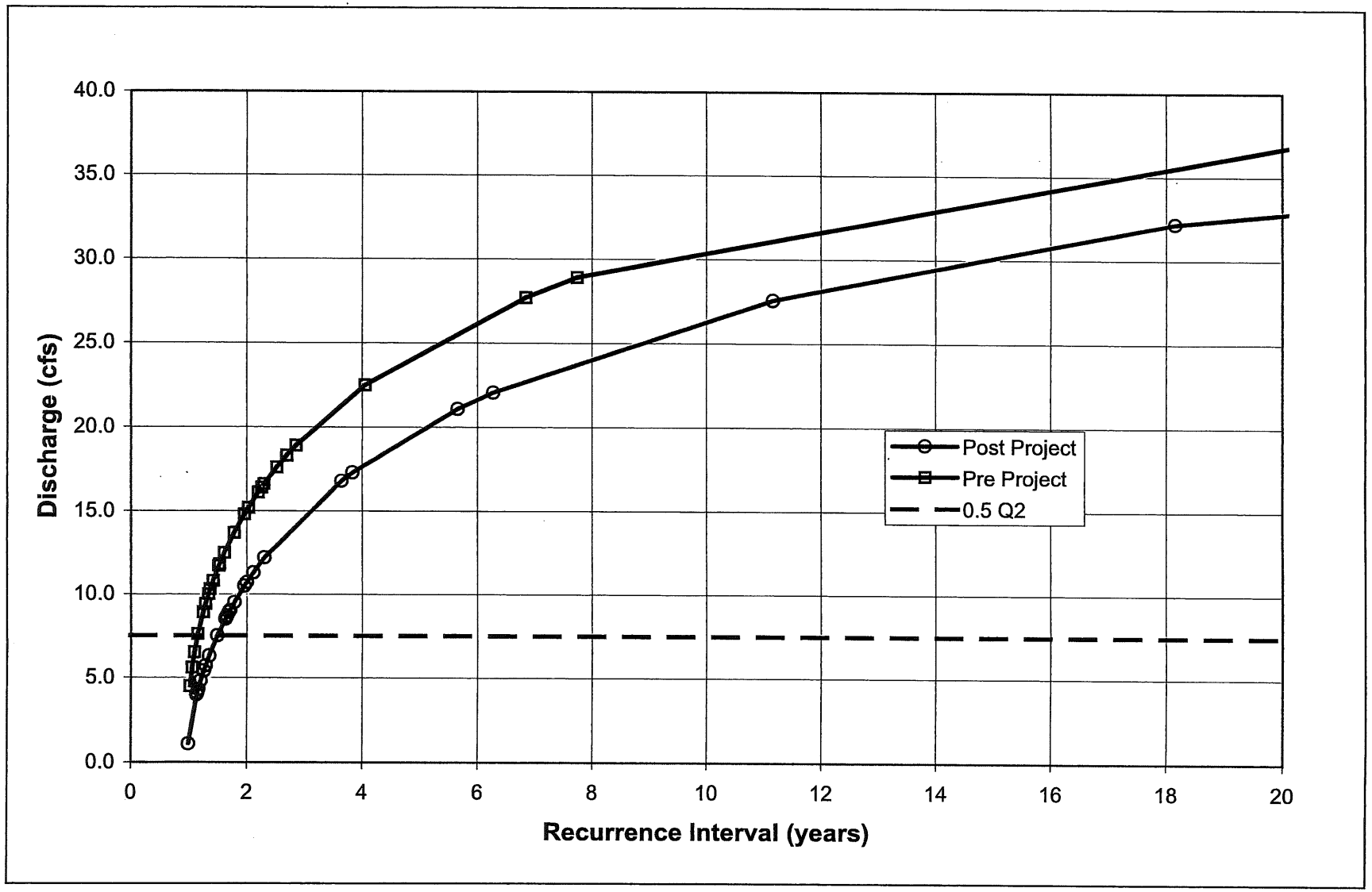
CITY OF ANTIOCH CONTRA COSTA COUNTY, CALIFORNIA

0' 200' 600' 800'

SCALE: 1"= 200'
APRIL 9, 2008

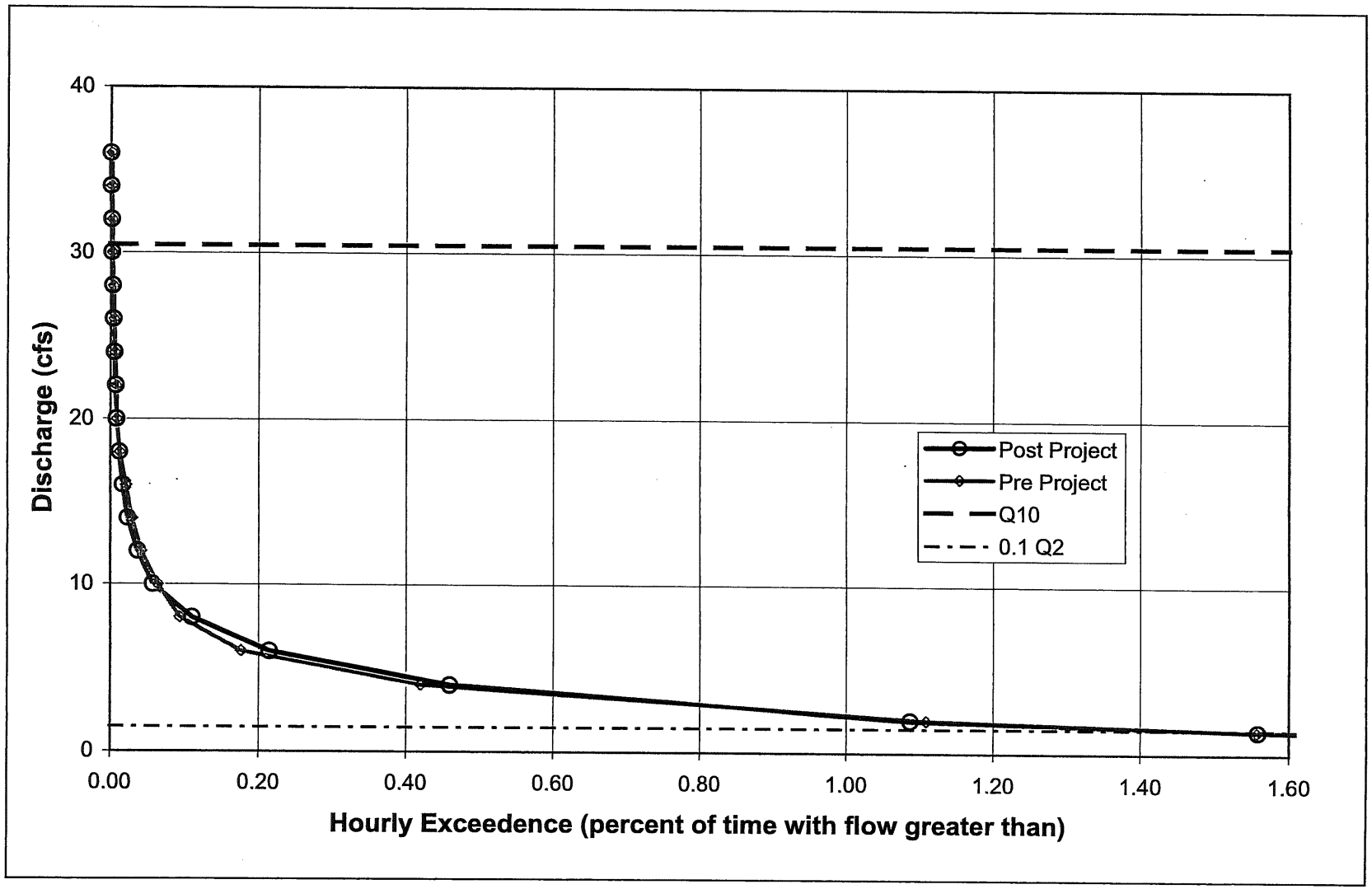
Carlson, Barbee & Gibson, Inc.

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Balance Hydrologics, Inc.

Figure 4. Peak flow frequency statistics, Aviano project, City of Antioch, California



Balance Hydrologics, Inc.

Figure 5. Flow duration statistics, Aviano project, City of Antioch, California

APPENDIX A

Contra Costa Clean Water Program
Treatment BMP Sizing Worksheets

APPENDICES

Contra Costa Clean Water Program

Treatment BMP Sizing Worksheet

See *Stormwater C.3 Guidebook* Chapter 5 for Instructions

Project Name:	Aviano - Basin 1 shed	Date:	4/18/2008
Address/Location:	Antioch, CA	APN:	

Total Project Area (in sq. ft.; exclude areas of site to remain undeveloped): 1569192 Impervious: 784,596 Pervious: 784,596

Table 1. Pervious Areas

Area ID	Surface	Self-retaining Area (sq. ft.)	Non-self retaining Area (sq. ft.)	"C" Factor	Size * C
				0.1	0
					0
					0
					0
					0
					0
Totals		0	0		0

Runoff factors for non-self-retaining pervious areas

Surface	"C"
Turf	0.1
Landscape	0.1
Crushed aggregate	0.1
Pervious Concrete	0.6
Pervious Asphalt	0.55

Table 2. Impervious Areas Draining to Planters, Swales, and Bioretention Areas

Area ID	Surface	Size (square feet)	Type and ID# of BMP to be used	Area Served by BMP (SF)	Sizing Factor (=0.04)	Minimum Surface Area	Surface Area as designed
					0.04	0	960
					0.04	0	
					0.04	0	
					0.04	0	
					0.04	0	
					0.04	0	
					0.04	0	
					0.04	0	
					0.04	0	
					0.04	0	
					0.04	0	
					0.04	0	
Total		0		0			

Table 3. Impervious Areas Draining to Infiltration Basins, Infiltration Trenches, and Dry Wells

Enter Mean Annual Precipitation from Figure B-166: 14

Area ID (as indicated on site drawing)	Percent Directly Connected Impervious Area	Amount of Area (SF)	BMP ID# and Type	Area served by BMP (SF)	Required Water Quality Volume (CF)	Proposed depth (ft.)	Porosity of fill (Rock = 35%; Basin = 100%)	Minimum required BMP Surface Area (SF)	Proposed Surface Area (SF)	Infiltration Rate (in./hr.)	Time to drain (hours)
					0						
					0						
					0						
					0						
					0						
					0						
Total		0		0							

Sizing of Conventional BMPs to Serve Entire Site:

	Table 1: Self Retaining Areas	Table 2: flow-based IMPs	Table 3: volume-based IMPs	Total Area served by IMPs	Remaining impervious area	Remaining Total Area	Percent DCIA of remaining area	Required Water Quality Volume
Volume-based BMPs OR	0	0	0	0	784,596	1,569,192	50%	41,113

	Composite "C" Factor	Design Flow Rate (cfs)
Flow-Based BMPs		
784,596 1,569,192	100%	7.265

Contra Costa Clean Water Program

Treatment BMP Sizing Worksheet

See *Stormwater C.3 Guidebook* Chapter 5 for Instructions

Project Name: Aviano - Basin 2 shed Date: 4/18/2008

Address/Location: Antioch, CA APN:

Total Project Area (in sq. ft.; exclude areas of site to remain undeveloped): 1187090 Impervious: 593,545 Pervious: 593,545

Table 1. Pervious Areas

Area ID	Surface	Self-retaining Area (sq. ft.)	Non-self retaining Area (sq. ft.)	"C" Factor	Size * C
				0.1	0
					0
					0
					0
					0
					0
Totals		0	0		0

Runoff factors for non-self-retaining pervious areas

Surface	"C"
Turf	0.1
Landscape	0.1
Crushed aggregate	0.1
Pervious Concrete	0.6
Pervious Asphalt	0.55

Table 2. Impervious Areas Draining to Planters, Swales, and Bioretention Areas

Area ID	Surface	Size (square feet)	Type and ID# of BMP to be used	Area Served by BMP (SF)	Sizing Factor (=0.04)	Minimum Surface Area	Surface Area as designed
					0.04	0	960
					0.04	0	
					0.04	0	
					0.04	0	
					0.04	0	
					0.04	0	
					0.04	0	
					0.04	0	
					0.04	0	
					0.04	0	
					0.04	0	
					0.04	0	
Total		0		0			

Table 3. Impervious Areas Draining to Infiltration Basins, Infiltration Trenches, and Dry Wells

Enter Mean Annual Precipitation from Figure B-166: 14

Area ID (as indicated on site drawing)	Percent Directly Connected Impervious Area	Amount of Area (SF)	BMP ID# and Type	Area served by BMP (SF)	Required Water Quality Volume (CF)	Proposed depth (ft.)	Porosity of fill (Rock = 35%; Basin = 100%)	Minimum required BMP Surface Area (SF)	Proposed Surface Area (SF)	Infiltration Rate (in./hr.)	Time to drain (hours)
					0						
					0						
					0						
					0						
					0						
					0						
Total		0		0							

Sizing of Conventional BMPs to Serve Entire Site:

	Table 1: Self Retaining Areas	Table 2: flow-based IMPs	Table 3: volume-based IMPs	Total Area served by IMPs	Remaining impervious area	Remaining Total Area	Percent DCIA of remaining area	Required Water Quality Volume
Volume-based BMPs OR	0	0	0	0	593,545	1,187,090	50%	31,102

	Composite "C" Factor	Design Flow Rate (cfs)
Flow-Based BMPs		
593,545 1,187,090	100%	5.496

Contra Costa Clean Water Program

Treatment BMP Sizing Worksheet

See *Stormwater C.3 Guidebook* Chapter 5 for Instructions

Project Name:	Aviano - Basin 3 shed	Date:	4/18/2008
Address/Location:	Antioch, CA	APN:	

Total Project Area (in sq. ft.; exclude areas of site to remain undeveloped): 1236073 Impervious: 618,037 Pervious: 618,037

Table 1. Pervious Areas

Area ID	Surface	Self-retaining Area (sq. ft.)	Non-self retaining Area (sq. ft.)	"C" Factor	Size * C
				0.1	0
					0
					0
					0
					0
					0
Totals		0	0		0

Runoff factors for non-self-retaining pervious areas

Surface	"C"
Turf	0.1
Landscape	0.1
Crushed aggregate	0.1
Pervious Concrete	0.6
Pervious Asphalt	0.55

Table 2. Impervious Areas Draining to Planters, Swales, and Bioretention Areas

Area ID	Surface	Size (square feet)	Type and ID# of BMP to be used	Area Served by BMP (SF)	Sizing Factor (=0.04)	Minimum Surface Area	Surface Area as designed
					0.04	0	960
					0.04	0	
					0.04	0	
					0.04	0	
					0.04	0	
					0.04	0	
					0.04	0	
					0.04	0	
					0.04	0	
					0.04	0	
					0.04	0	
					0.04	0	
Total		0		0			

Table 3. Impervious Areas Draining to Infiltration Basins, Infiltration Trenches, and Dry Wells

Enter Mean Annual Precipitation from Figure B-166: 14

Area ID (as indicated on site drawing)	Percent Directly Connected Impervious Area	Amount of Area (SF)	BMP ID# and Type	Area served by BMP (SF)	Required Water Quality Volume (CF)	Proposed depth (ft.)	Porosity of fill (Rock = 35%; Basin = 100%)	Minimum required BMP Surface Area (SF)	Proposed Surface Area (SF)	Infiltration Rate (in./hr.)	Time to drain (hours)
					0						
					0						
					0						
					0						
					0						
					0						
Total		0		0							

Sizing of Conventional BMPs to Serve Entire Site:

	Table 1: Self Retaining Areas	Table 2: flow-based IMPs	Table 3: volume-based IMPs	Total Area served by IMPs	Remaining impervious area	Remaining Total Area	Percent DCIA of remaining area	Required Water Quality Volume
Volume-based BMPs OR	0	0	0	0	618,037	1,236,073	50%	32,385

	Composite "C" Factor	Design Flow Rate (cfs)
Flow-Based BMPs		
618,037 1,236,073	100%	5.723

Version 23 March 2005. Find this Worksheet at www.cccleanwater.org/construction/nd.php

Contra Costa Clean Water Program

Treatment BMP Sizing Worksheet

See *Stormwater C.3 Guidebook* Chapter 5 for Instructions

Project Name: Aviano - East Basin shed Date: 4/18/2008

Address/Location: Antioch, CA APN:

Total Project Area (in sq. ft.; exclude areas of site to remain undeveloped): 2184549 Impervious: 1,092,275 Pervious: 1,092,275

Table 1. Pervious Areas

Area ID	Surface	Self-retaining Area (sq. ft.)	Non-self retaining Area (sq. ft.)	"C" Factor	Size * C
				0.1	0
					0
					0
					0
					0
					0
Totals		0	0		0

Runoff factors for non-self-retaining pervious areas

Surface	"C"
Turf	0.1
Landscape	0.1
Crushed aggregate	0.1
Pervious Concrete	0.6
Pervious Asphalt	0.55

Table 2. Impervious Areas Draining to Planters, Swales, and Bioretention Areas

Area ID	Surface	Size (square feet)	Type and ID# of BMP to be used	Area Served by BMP (SF)	Sizing Factor (=0.04)	Minimum Surface Area	Surface Area as designed
					0.04	0	960
					0.04	0	
					0.04	0	
					0.04	0	
					0.04	0	
					0.04	0	
					0.04	0	
					0.04	0	
					0.04	0	
					0.04	0	
					0.04	0	
					0.04	0	
Total		0		0			

Table 3. Impervious Areas Draining to Infiltration Basins, Infiltration Trenches, and Dry Wells

Enter Mean Annual Precipitation from Figure B-166: 14

Area ID (as indicated on site drawing)	Percent Directly Connected Impervious Area	Amount of Area (SF)	BMP ID# and Type	Area served by BMP (SF)	Required Water Quality Volume (CF)	Proposed depth (ft.)	Porosity of fill (Rock = 35%; Basin = 100%)	Minimum required BMP Surface Area (SF)	Proposed Surface Area (SF)	Infiltration Rate (in./hr.)	Time to drain (hours)
					0						
					0						
					0						
					0						
					0						
					0						
Total		0		0							

Sizing of Conventional BMPs to Serve Entire Site:

	Table 1: Self Retaining Areas	Table 2: flow-based IMPs	Table 3: volume-based IMPs	Total Area served by IMPs	Remaining impervious area	Remaining Total Area	Percent DCIA of remaining area	Required Water Quality Volume
Volume-based BMPs OR	0	0	0	0	1,092,275	2,184,549	50%	57,235

	Composite "C" Factor	Design Flow Rate (cfs)
Flow-Based BMPs	100%	10.114

Contra Costa Clean Water Program

Treatment BMP Sizing Worksheet

See *Stormwater C.3 Guidebook* Chapter 5 for Instructions

Project Name:	Aviano - Off-site North shed	**Date:**	4/18/2008
Address/Location:	Antioch, CA	**APN:**	

Total Project Area (in sq. ft.; exclude areas of site to remain undeveloped): 3762168 **Impervious:** 1,881,084 **Pervious:** 1,881,084

Table 1. Pervious Areas

Area ID	Surface	Self-retaining Area (sq. ft.)	Non-self retaining Area (sq. ft.)	"C" Factor	Size * C
				0.1	0
					0
					0
					0
					0
					0
Totals		0	0		0

Runoff factors for non-self-retaining pervious areas

Surface	"C"
Turf	0.1
Landscape	0.1
Crushed aggregate	0.1
Pervious Concrete	0.6
Pervious Asphalt	0.55

Table 2. Impervious Areas Draining to Planters, Swales, and Bioretention Areas

Area ID	Surface	Size (square feet)	Type and ID# of BMP to be used	Area Served by BMP (SF)	Sizing Factor (=0.04)	Minimum Surface Area	Surface Area as designed
					0.04	0	960
					0.04	0	
					0.04	0	
					0.04	0	
					0.04	0	
					0.04	0	
					0.04	0	
					0.04	0	
					0.04	0	
					0.04	0	
					0.04	0	
					0.04	0	
Total		0		0			

Table 3. Impervious Areas Draining to Infiltration Basins, Infiltration Trenches, and Dry Wells

Enter Mean Annual Precipitation from Figure B-166: 14

Area ID (as indicated on site drawing)	Percent Directly Connected Impervious Area	Amount of Area (SF)	BMP ID# and Type	Area served by BMP (SF)	Required Water Quality Volume (CF)	Proposed depth (ft.)	Porosity of fill (Rock = 35%; Basin = 100%)	Minimum required BMP Surface Area (SF)	Proposed Surface Area (SF)	Infiltration Rate (in./hr.)	Time to drain (hours)
					0						
					0						
					0						
					0						
					0						
					0						
Total		0		0							

Sizing of Conventional BMPs to Serve Entire Site:

	Table 1: Self Retaining Areas	Table 2: flow-based IMPs	Table 3: volume-based IMPs	Total Area served by IMPs	Remaining impervious area	Remaining Total Area	Percent DCIA of remaining area	Required Water Quality Volume
Volume-based BMPs OR	0	0	0	0	1,881,084	3,762,168	50%	98,569

	Composite "C" Factor	Design Flow Rate (cfs)
Flow-Based BMPs		
1,881,084 3,762,168	100%	17.417

APPENDIX B

Contra Costa County Flood Control HYDRO-6 Output

CONTRA COSTA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

255 GLACIER DRIVE, MARTINEZ, CA 94553
925-313-2292

```
**********************************
*  EXECUTED  BY  : Scott         *
*            TIME: 12:52:21.68   *
*            DATE: FEB 28, 2008  *
**********************************
```

```
*******************************************************************************

Pre-1

*******************************************************************************
    STORM FREQUENCY              10  YR            L             .80  MI
    STORM DURATION                3  HR            LCA           .33  MI
    WATERSHED AREA             .222  SQ MI         DH            34.  FT
    MEAN SEASONAL RAINFALL   14.00  IN            N            .053
    AREA-RAINFALL FACTOR      1.00               S-CURVE   WC MTN CURVE
    STORM RAINFALL AMOUNT     1.16  IN            LAG-TIME      .38  HR
    INFILTRATION RATE         .170  IN/HR         C SUB T     1.27

UNIT HYDROGRAPH *****  NO. OF POINTS =   13     DT =   15.  MIN
   180.    169.     73.     42.     30.     20.     17.     15.     12.      9.
     4.      2.      0.

FLOOD HYDROGRAPH *****  NO. OF POINTS =   24     DT =   15.  MIN
     1.      1.      1.      1.      1.      1.      1.      1.      6.     21.
    67.     61.     31.     18.     13.      9.      8.      7.      6.      4.
     3.      2.      1.      1.

PEAK FLOW (IN CFS) =    67.  AT   2.85  HR     VOLUME (IN AC-FT) =      5.57

-------------------------------------------------------------------------------

-------------------------------------------------------------------------------
    STORM FREQUENCY              10  YR            L             .80  MI
    STORM DURATION                6  HR            LCA           .33  MI
    WATERSHED AREA             .222  SQ MI         DH            34.  FT
    MEAN SEASONAL RAINFALL   14.00  IN            N            .053
    AREA-RAINFALL FACTOR      1.00               S-CURVE   WC MTN CURVE
    STORM RAINFALL AMOUNT     1.58  IN            LAG-TIME      .38  HR
    INFILTRATION RATE         .170  IN/HR         C SUB T     1.27

UNIT HYDROGRAPH *****  NO. OF POINTS =   13     DT =   15.  MIN
   180.    169.     73.     42.     30.     20.     17.     15.     12.      9.
     4.      2.      0.

FLOOD HYDROGRAPH *****  NO. OF POINTS =   36     DT =   15.  MIN
     1.      1.      1.      1.      1.      1.      1.      1.      1.      1.
     1.      1.      1.      1.      1.      3.     49.     56.     34.     21.
    14.      9.      8.      7.      6.      4.      3.      2.      1.      1.
     1.      1.      1.      1.      1.      1.

PEAK FLOW (IN CFS) =    59.  AT   4.51  HR     VOLUME (IN AC-FT) =      4.97

-------------------------------------------------------------------------------

-------------------------------------------------------------------------------
    STORM FREQUENCY              10  YR            L             .80  MI
    STORM DURATION               12  HR            LCA           .33  MI
    WATERSHED AREA             .222  SQ MI         DH            34.  FT
    MEAN SEASONAL RAINFALL   14.00  IN            N            .053
    AREA-RAINFALL FACTOR      1.00               S-CURVE   WC MTN CURVE
    STORM RAINFALL AMOUNT     2.14  IN            LAG-TIME      .38  HR
    INFILTRATION RATE         .170  IN/HR         C SUB T     1.27
```

```
UNIT HYDROGRAPH *****  NO. OF POINTS =   13     DT =   15.  MIN
   180.    169.     73.     42.     30.     20.     17.     15.     12.      9.
     4.      2.      0.

FLOOD HYDROGRAPH *****  NO. OF POINTS =   60     DT =   15.  MIN
     1.      1.      1.      1.      1.      1.      1.      1.      1.      1.
     1.      1.      1.      1.      1.      1.      1.      1.      1.      1.
     1.      1.      1.     34.     48.     36.     26.     20.     16.     12.
     9.      7.      6.      4.      3.      2.      2.      1.      1.      1.
     1.      1.      1.      1.      1.      1.      1.      1.      1.      1.
     1.      1.      1.      1.      1.      1.      1.      1.      1.      1.

PEAK FLOW (IN CFS) =    49.  AT   6.31  HR     VOLUME (IN AC-FT) =      5.69

--------------------------------------------------------------------------------

--------------------------------------------------------------------------------
    STORM FREQUENCY              10  YR            L            .80  MI
    STORM DURATION               24  HR            LCA          .33  MI
    WATERSHED AREA             .222  SQ MI         DH           34.  FT
    MEAN SEASONAL RAINFALL   14.00  IN            N          .053
    AREA-RAINFALL FACTOR      1.00               S-CURVE   WC MTN CURVE
    STORM RAINFALL AMOUNT     2.85  IN            LAG-TIME     .38  HR
    INFILTRATION RATE         .170  IN/HR         C SUB T     1.27

UNIT HYDROGRAPH *****  NO. OF POINTS =   13     DT =   15.  MIN
   180.    169.     73.     42.     30.     20.     17.     15.     12.      9.
     4.      2.      0.

FLOOD HYDROGRAPH *****  NO. OF POINTS =  108     DT =   15.  MIN
     1.      1.      1.      1.      1.      1.      1.      1.      1.      1.
     1.      1.      1.      1.      1.      1.      1.      1.      1.      1.
     1.      1.      1.      1.      1.      1.      1.      1.      1.      1.
     1.      1.      1.      1.      1.      1.      1.      1.      1.     31.
    39.     31.     24.     18.     12.      9.      7.      6.      5.      4.
     3.      2.      2.      1.      1.      1.      1.      1.      1.      1.
     1.      1.      1.      1.      1.      1.      1.      1.      1.      1.
     1.      1.      1.      1.      1.      1.      1.      1.      1.      1.
     1.      1.      1.      1.      1.      1.      1.      1.      1.      1.
     1.      1.      1.      1.      1.      1.      1.      1.      1.      1.
     1.      1.      1.      1.      1.      1.      1.      1.

PEAK FLOW (IN CFS) =    39.  AT  10.33  HR     VOLUME (IN AC-FT) =      6.12

--------------------------------------------------------------------------------

--------------------------------------------------------------------------------
    STORM FREQUENCY             100  YR            L            .80  MI
    STORM DURATION                3  HR            LCA          .33  MI
    WATERSHED AREA             .222  SQ MI         DH           34.  FT
    MEAN SEASONAL RAINFALL   14.00  IN            N          .053
    AREA-RAINFALL FACTOR      1.00               S-CURVE   WC MTN CURVE
    STORM RAINFALL AMOUNT     1.68  IN            LAG-TIME     .38  HR
    INFILTRATION RATE         .170  IN/HR         C SUB T     1.27

UNIT HYDROGRAPH *****  NO. OF POINTS =   13     DT =   15.  MIN
   180.    169.     73.     42.     30.     20.     17.     15.     12.      9.
     4.      2.      0.

FLOOD HYDROGRAPH *****  NO. OF POINTS =   24     DT =   15.  MIN
     1.      1.      1.      1.      1.      7.     15.     25.     43.     58.
   117.    105.     56.     33.     24.     17.     14.     12.      9.      7.
     4.      2.      1.      1.

PEAK FLOW (IN CFS) =   120.  AT   2.81  HR     VOLUME (IN AC-FT) =     11.50

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    STORM FREQUENCY             100  YR            L            .80  MI
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STORM DURATION	6	HR	LCA	.33	MI
WATERSHED AREA	.222	SQ MI	DH	34.	FT
MEAN SEASONAL RAINFALL	14.00	IN	N	.053	
AREA-RAINFALL FACTOR	1.00		S-CURVE	WC MTN CURVE	
STORM RAINFALL AMOUNT	2.33	IN	LAG-TIME	.38	HR
INFILTRATION RATE	.170	IN/HR	C SUB T	1.27	

UNIT HYDROGRAPH ***** NO. OF POINTS = 13 DT = 15. MIN

180.	169.	73.	42.	30.	20.	17.	15.	12.	9.
4.	2.	0.							

FLOOD HYDROGRAPH ***** NO. OF POINTS = 36 DT = 15. MIN

1.	1.	1.	1.	1.	2.	4.	6.	17.	25.
20.	15.	12.	11.	22.	44.	106.	103.	67.	46.
33.	25.	21.	17.	13.	9.	6.	4.	3.	2.
2.	1.	1.	1.	1.	1.				

PEAK FLOW (IN CFS) = 105. AT 4.38 HR VOLUME (IN AC-FT) = 13.35

STORM FREQUENCY	100	YR	L	.80	MI
STORM DURATION	12	HR	LCA	.33	MI
WATERSHED AREA	.222	SQ MI	DH	34.	FT
MEAN SEASONAL RAINFALL	14.00	IN	N	.053	
AREA-RAINFALL FACTOR	1.00		S-CURVE	WC MTN CURVE	
STORM RAINFALL AMOUNT	3.17	IN	LAG-TIME	.38	HR
INFILTRATION RATE	.170	IN/HR	C SUB T	1.27	

UNIT HYDROGRAPH ***** NO. OF POINTS = 13 DT = 15. MIN

180.	169.	73.	42.	30.	20.	17.	15.	12.	9.
4.	2.	0.							

FLOOD HYDROGRAPH ***** NO. OF POINTS = 60 DT = 15. MIN

1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
1.	12.	32.	100.	110.	77.	57.	46.	39.	33.
28.	23.	18.	14.	11.	9.	6.	4.	3.	2.
2.	2.	2.	1.	1.	1.	1.	1.	1.	1.
1.	1.	1.	1.	1.	1.	1.	1.	1.	1.

PEAK FLOW (IN CFS) = 115. AT 6.26 HR VOLUME (IN AC-FT) = 13.94

STORM FREQUENCY	100	YR	L	.80	MI
STORM DURATION	24	HR	LCA	.33	MI
WATERSHED AREA	.222	SQ MI	DH	34.	FT
MEAN SEASONAL RAINFALL	14.00	IN	N	.053	
AREA-RAINFALL FACTOR	1.00		S-CURVE	WC MTN CURVE	
STORM RAINFALL AMOUNT	4.26	IN	LAG-TIME	.38	HR
INFILTRATION RATE	.170	IN/HR	C SUB T	1.27	

UNIT HYDROGRAPH ***** NO. OF POINTS = 13 DT = 15. MIN

180.	169.	73.	42.	30.	20.	17.	15.	12.	9.
4.	2.	0.							

FLOOD HYDROGRAPH ***** NO. OF POINTS = 108 DT = 15. MIN

1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
1.	1.	1.	1.	1.	1.	1.	1.	49.	97.
86.	67.	53.	42.	33.	28.	25.	22.	18.	14.
11.	9.	7.	5.	4.	3.	2.	2.	2.	1.
1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
1.	1.	1.	1.	1.	1.	1.	1.	1.	1.

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     1.      1.      1.      1.      1.      1.      1.      1.

PEAK FLOW (IN CFS) =    97.  AT  10.14  HR     VOLUME (IN AC-FT) =     13.98

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OS North

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    STORM FREQUENCY              10  YR            L            .62  MI
    STORM DURATION                3  HR            LCA          .31  MI
    WATERSHED AREA             .135  SQ MI         DH           38.  FT
    MEAN SEASONAL RAINFALL    14.00  IN            N          .028
    AREA-RAINFALL FACTOR       1.00               S-CURVE   WC MTN CURVE
    STORM RAINFALL AMOUNT      1.16  IN            LAG-TIME     .16  HR
    INFILTRATION RATE          .080  IN/HR         C SUB T      .67

UNIT HYDROGRAPH *****  NO. OF POINTS =    6     DT =   15.  MIN
   228.     66.     28.     19.      7.      1.

FLOOD HYDROGRAPH *****  NO. OF POINTS =   17     DT =   15.  MIN
     1.      1.      1.      1.      1.      1.     10.     17.     29.     34.
    80.     38.     15.      9.      4.      1.      1.

PEAK FLOW (IN CFS) =    80.  AT   2.72  HR     VOLUME (IN AC-FT) =      5.04

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    STORM FREQUENCY              10  YR            L            .62  MI
    STORM DURATION                6  HR            LCA          .31  MI
    WATERSHED AREA             .135  SQ MI         DH           38.  FT
    MEAN SEASONAL RAINFALL    14.00  IN            N          .028
    AREA-RAINFALL FACTOR       1.00               S-CURVE   WC MTN CURVE
    STORM RAINFALL AMOUNT      1.58  IN            LAG-TIME     .16  HR
    INFILTRATION RATE          .080  IN/HR         C SUB T      .67

UNIT HYDROGRAPH *****  NO. OF POINTS =    6     DT =   15.  MIN
   228.     66.     28.     19.      7.      1.

FLOOD HYDROGRAPH *****  NO. OF POINTS =   29     DT =   15.  MIN
     1.      1.      1.      1.      1.      1.      1.      4.     14.     16.
    10.      9.      7.      7.     16.     30.     74.     42.     26.     18.
    12.      8.      7.      6.      2.      1.      1.      1.      1.

PEAK FLOW (IN CFS) =    74.  AT   4.29  HR     VOLUME (IN AC-FT) =      6.55

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    STORM FREQUENCY              10  YR            L            .62  MI
    STORM DURATION               12  HR            LCA          .31  MI
    WATERSHED AREA             .135  SQ MI         DH           38.  FT
    MEAN SEASONAL RAINFALL    14.00  IN            N          .028
    AREA-RAINFALL FACTOR       1.00               S-CURVE   WC MTN CURVE
    STORM RAINFALL AMOUNT      2.14  IN            LAG-TIME     .16  HR
    INFILTRATION RATE          .080  IN/HR         C SUB T      .67

UNIT HYDROGRAPH *****  NO. OF POINTS =    6     DT =   15.  MIN
   228.     66.     28.     19.      7.      1.

FLOOD HYDROGRAPH *****  NO. OF POINTS =   53     DT =   15.  MIN
     1.      1.      1.      1.      1.      1.      1.      1.      1.      1.
     1.      1.      1.      1.      1.      1.      1.      1.      1.      1.
     7.     18.     25.     75.     49.     31.     24.     19.     15.     11.
    10.      8.      7.      7.      6.      6.      4.      3.      3.      3.
     3.      2.      2.      2.      1.      1.      1.      1.      1.      1.
     1.      1.      1.
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PEAK FLOW (IN CFS) =    75.  AT   6.07  HR     VOLUME (IN AC-FT) =      7.49

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    STORM FREQUENCY              10  YR            L            .62  MI
    STORM DURATION               24  HR            LCA          .31  MI
    WATERSHED AREA             .135  SQ MI         DH           38.  FT
    MEAN SEASONAL RAINFALL    14.00  IN            N          .028
    AREA-RAINFALL FACTOR       1.00               S-CURVE   WC MTN CURVE
    STORM RAINFALL AMOUNT      2.85  IN            LAG-TIME     .16  HR
    INFILTRATION RATE          .080  IN/HR         C SUB T      .67

UNIT HYDROGRAPH *****  NO. OF POINTS =    6     DT =   15.  MIN
   228.     66.     28.     19.      7.      1.

FLOOD HYDROGRAPH *****  NO. OF POINTS =  101     DT =   15.  MIN
     1.      1.      1.      1.      1.      1.      1.      1.      1.      1.
     1.      1.      1.      1.      1.      1.      1.      1.      1.      1.
     1.      1.      1.      1.      1.      1.      1.      1.      1.      1.
     1.      1.      1.      1.      1.      1.      1.      9.     48.     59.
    37.     32.     22.     17.     12.     10.      9.      9.      7.      7.
     6.      6.      5.      4.      4.      3.      3.      3.      2.      2.
     2.      2.      2.      2.      1.      1.      1.      1.      1.      1.
     1.      1.      1.      1.      1.      1.      1.      1.      1.      1.
     1.      1.      1.      1.      1.      1.      1.      1.      1.      1.
     1.      1.      1.      1.      1.      1.      1.      1.      1.      1.
     1.

PEAK FLOW (IN CFS) =    60.  AT  10.04  HR     VOLUME (IN AC-FT) =      7.76

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    STORM FREQUENCY             100  YR            L            .62  MI
    STORM DURATION                3  HR            LCA          .31  MI
    WATERSHED AREA             .135  SQ MI         DH           38.  FT
    MEAN SEASONAL RAINFALL    14.00  IN            N          .028
    AREA-RAINFALL FACTOR       1.00               S-CURVE   WC MTN CURVE
    STORM RAINFALL AMOUNT      1.68  IN            LAG-TIME     .16  HR
    INFILTRATION RATE          .080  IN/HR         C SUB T      .67

UNIT HYDROGRAPH *****  NO. OF POINTS =    6     DT =   15.  MIN
   228.     66.     28.     19.      7.      1.

FLOOD HYDROGRAPH *****  NO. OF POINTS =   17     DT =   15.  MIN
     1.      1.      1.      1.      4.     36.     28.     32.     48.     54.
   120.     59.     23.     13.      6.      2.      1.

PEAK FLOW (IN CFS) =   125.  AT   2.71  HR     VOLUME (IN AC-FT) =      8.83

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    STORM FREQUENCY             100  YR            L            .62  MI
    STORM DURATION                6  HR            LCA          .31  MI
    WATERSHED AREA             .135  SQ MI         DH           38.  FT
    MEAN SEASONAL RAINFALL    14.00  IN            N          .028
    AREA-RAINFALL FACTOR       1.00               S-CURVE   WC MTN CURVE
    STORM RAINFALL AMOUNT      2.33  IN            LAG-TIME     .16  HR
    INFILTRATION RATE          .080  IN/HR         C SUB T      .67

UNIT HYDROGRAPH *****  NO. OF POINTS =    6     DT =   15.  MIN
   228.     66.     28.     19.      7.      1.

FLOOD HYDROGRAPH *****  NO. OF POINTS =   29     DT =   15.  MIN
     1.      1.      1.      1.     21.     18.     14.     15.     27.     27.
    19.     16.     14.     14.     27.     46.    111.     64.     41.     30.
    20.     15.     13.     11.      4.      2.      1.      1.      1.
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PEAK FLOW (IN CFS) = 115. AT 4.29 HR VOLUME (IN AC-FT) = 11.91

STORM FREQUENCY	100	YR	L	.62	MI
STORM DURATION	12	HR	LCA	.31	MI
WATERSHED AREA	.135	SQ MI	DH	38.	FT
MEAN SEASONAL RAINFALL	14.00	IN	N	.028	
AREA-RAINFALL FACTOR	1.00		S-CURVE	WC MTN CURVE	
STORM RAINFALL AMOUNT	3.17	IN	LAG-TIME	.16	HR
INFILTRATION RATE	.080	IN/HR	C SUB T	.67	

UNIT HYDROGRAPH ***** NO. OF POINTS = 6 DT = 15. MIN

228. 66. 28. 19. 7. 1.

FLOOD HYDROGRAPH ***** NO. OF POINTS = 53 DT = 15. MIN

1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
1.	1.	1.	1.	8.	11.	13.	15.	18.	24.
27.	35.	43.	116.	76.	49.	39.	31.	25.	20.
17.	15.	13.	13.	12.	12.	9.	8.	7.	7.
7.	6.	6.	6.	5.	5.	4.	4.	2.	1.
1.	1.	1.							

PEAK FLOW (IN CFS) = 120. AT 6.06 HR VOLUME (IN AC-FT) = 14.87

STORM FREQUENCY	100	YR	L	.62	MI
STORM DURATION	24	HR	LCA	.31	MI
WATERSHED AREA	.135	SQ MI	DH	38.	FT
MEAN SEASONAL RAINFALL	14.00	IN	N	.028	
AREA-RAINFALL FACTOR	1.00		S-CURVE	WC MTN CURVE	
STORM RAINFALL AMOUNT	4.26	IN	LAG-TIME	.16	HR
INFILTRATION RATE	.080	IN/HR	C SUB T	.67	

UNIT HYDROGRAPH ***** NO. OF POINTS = 6 DT = 15. MIN

228. 66. 28. 19. 7. 1.

FLOOD HYDROGRAPH ***** NO. OF POINTS = 101 DT = 15. MIN

1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
1.	1.	1.	1.	1.	1.	1.	1.	1.	3.
7.	9.	12.	14.	18.	19.	27.	29.	79.	94.
59.	51.	35.	29.	21.	18.	17.	16.	14.	13.
12.	12.	10.	10.	9.	8.	7.	7.	7.	6.
6.	6.	6.	6.	5.	5.	4.	4.	4.	4.
4.	3.	3.	3.	3.	3.	3.	3.	3.	3.
2.	2.	2.	2.	2.	2.	2.	2.	1.	1.
1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
1.									

PEAK FLOW (IN CFS) = 94. AT 10.01 HR VOLUME (IN AC-FT) = 16.51

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Post B1

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STORM FREQUENCY	10	YR	L	.38	MI
STORM DURATION	3	HR	LCA	.17	MI
WATERSHED AREA	.056	SQ MI	DH	19.	FT
MEAN SEASONAL RAINFALL	14.00	IN	N	.029	
AREA-RAINFALL FACTOR	1.00		S-CURVE	WC MTN CURVE	
STORM RAINFALL AMOUNT	1.16	IN	LAG-TIME	.12	HR
INFILTRATION RATE	.050	IN/HR	C SUB T	.70	

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UNIT HYDROGRAPH *****  NO. OF POINTS =    4     DT =   15.  MIN
   109.     23.     11.      2.

FLOOD HYDROGRAPH *****  NO. OF POINTS =   15     DT =   15.  MIN
     0.      0.      0.      0.      0.      5.      7.      9.     14.     16.
    38.     16.      5.      2.      0.

PEAK FLOW (IN CFS) =    38.  AT   2.70  HR     VOLUME (IN AC-FT) =      2.35

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    STORM FREQUENCY              10  YR            L             .38  MI
    STORM DURATION                6  HR            LCA           .17  MI
    WATERSHED AREA             .056  SQ MI         DH            19.  FT
    MEAN SEASONAL RAINFALL   14.00  IN            N            .029
    AREA-RAINFALL FACTOR       1.00               S-CURVE   WC MTN CURVE
    STORM RAINFALL AMOUNT      1.58  IN            LAG-TIME      .12  HR
    INFILTRATION RATE          .050  IN/HR         C SUB T       .70

UNIT HYDROGRAPH *****  NO. OF POINTS =    4     DT =   15.  MIN
   109.     23.     11.      2.

FLOOD HYDROGRAPH *****  NO. OF POINTS =   27     DT =   15.  MIN
     0.      0.      0.      0.      0.      3.      3.      4.      8.      8.
     5.      5.      4.      4.      8.     14.     35.     18.     11.      7.
     5.      4.      4.      3.      1.      1.      0.

PEAK FLOW (IN CFS) =    35.  AT   4.27  HR     VOLUME (IN AC-FT) =      3.24

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    STORM FREQUENCY              10  YR            L             .38  MI
    STORM DURATION               12  HR            LCA           .17  MI
    WATERSHED AREA             .056  SQ MI         DH            19.  FT
    MEAN SEASONAL RAINFALL   14.00  IN            N            .029
    AREA-RAINFALL FACTOR       1.00               S-CURVE   WC MTN CURVE
    STORM RAINFALL AMOUNT      2.14  IN            LAG-TIME      .12  HR
    INFILTRATION RATE          .050  IN/HR         C SUB T       .70

UNIT HYDROGRAPH *****  NO. OF POINTS =    4     DT =   15.  MIN
   109.     23.     11.      2.

FLOOD HYDROGRAPH *****  NO. OF POINTS =   51     DT =   15.  MIN
     0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
     0.      0.      0.      0.      0.      0.      1.      4.      5.      7.
     8.     10.     13.     36.     21.     13.     10.      8.      7.      5.
     5.      4.      4.      4.      4.      3.      3.      2.      2.      2.
     2.      2.      2.      2.      2.      2.      1.      1.      1.      0.
     0.

PEAK FLOW (IN CFS) =    36.  AT   6.04  HR     VOLUME (IN AC-FT) =      4.16

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    STORM FREQUENCY              10  YR            L             .38  MI
    STORM DURATION               24  HR            LCA           .17  MI
    WATERSHED AREA             .056  SQ MI         DH            19.  FT
    MEAN SEASONAL RAINFALL   14.00  IN            N            .029
    AREA-RAINFALL FACTOR       1.00               S-CURVE   WC MTN CURVE
    STORM RAINFALL AMOUNT      2.85  IN            LAG-TIME      .12  HR
    INFILTRATION RATE          .050  IN/HR         C SUB T       .70

UNIT HYDROGRAPH *****  NO. OF POINTS =    4     DT =   15.  MIN
   109.     23.     11.      2.

FLOOD HYDROGRAPH *****  NO. OF POINTS =   99     DT =   15.  MIN
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     0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
     0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
     0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
     0.      0.      2.      4.      5.      6.      8.      9.     24.     28.
    16.     14.      8.      7.      5.      5.      5.      5.      4.      4.
     4.      3.      3.      3.      3.      2.      2.      2.      2.      2.
     2.      2.      2.      2.      2.      2.      1.      1.      1.      1.
     1.      1.      1.      1.      1.      1.      1.      1.      1.      1.
     1.      1.      1.      1.      1.      1.      1.      1.      1.      1.
     1.      1.      0.      0.      0.      0.      0.      0.      0.

PEAK FLOW (IN CFS) =    28.  AT  10.00  HR     VOLUME (IN AC-FT) =      4.76

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    STORM FREQUENCY             100  YR            L            .38  MI
    STORM DURATION                3  HR            LCA          .17  MI
    WATERSHED AREA             .056  SQ MI         DH           19.  FT
    MEAN SEASONAL RAINFALL   14.00  IN            N          .029
    AREA-RAINFALL FACTOR       1.00               S-CURVE   WC MTN CURVE
    STORM RAINFALL AMOUNT      1.68  IN            LAG-TIME     .12  HR
    INFILTRATION RATE          .050  IN/HR         C SUB T      .70

UNIT HYDROGRAPH *****  NO. OF POINTS =    4     DT =   15.  MIN
   109.     23.     11.      2.

FLOOD HYDROGRAPH *****  NO. OF POINTS =   15     DT =   15.  MIN
     0.      0.      0.      0.      6.     19.     13.     15.     22.     24.
    56.     23.      8.      2.      1.

PEAK FLOW (IN CFS) =    56.  AT   2.70  HR     VOLUME (IN AC-FT) =      3.92

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    STORM FREQUENCY             100  YR            L            .38  MI
    STORM DURATION                6  HR            LCA          .17  MI
    WATERSHED AREA             .056  SQ MI         DH           19.  FT
    MEAN SEASONAL RAINFALL   14.00  IN            N          .029
    AREA-RAINFALL FACTOR       1.00               S-CURVE   WC MTN CURVE
    STORM RAINFALL AMOUNT      2.33  IN            LAG-TIME     .12  HR
    INFILTRATION RATE          .050  IN/HR         C SUB T      .70

UNIT HYDROGRAPH *****  NO. OF POINTS =    4     DT =   15.  MIN
   109.     23.     11.      2.

FLOOD HYDROGRAPH *****  NO. OF POINTS =   27     DT =   15.  MIN
     0.      0.      0.      0.     14.      9.      7.      7.     13.     13.
     9.      8.      6.      7.     13.     22.     52.     27.     17.     11.
     8.      7.      6.      6.      2.      1.      0.

PEAK FLOW (IN CFS) =    52.  AT   4.27  HR     VOLUME (IN AC-FT) =      5.47

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    STORM FREQUENCY             100  YR            L            .38  MI
    STORM DURATION               12  HR            LCA          .17  MI
    WATERSHED AREA             .056  SQ MI         DH           19.  FT
    MEAN SEASONAL RAINFALL   14.00  IN            N          .029
    AREA-RAINFALL FACTOR       1.00               S-CURVE   WC MTN CURVE
    STORM RAINFALL AMOUNT      3.17  IN            LAG-TIME     .12  HR
    INFILTRATION RATE          .050  IN/HR         C SUB T      .70

UNIT HYDROGRAPH *****  NO. OF POINTS =    4     DT =   15.  MIN
   109.     23.     11.      2.

FLOOD HYDROGRAPH *****  NO. OF POINTS =   51     DT =   15.  MIN
     0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
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     0.      3.      5.      6.      6.      6.      7.      7.      9.     11.
    13.     16.     20.     54.     32.     21.     15.     12.     11.      9.
     8.      7.      6.      6.      6.      6.      5.      4.      4.      4.
     4.      4.      4.      4.      3.      3.      3.      3.      1.      0.
     0.

PEAK FLOW (IN CFS) =    54.  AT   6.04  HR     VOLUME (IN AC-FT) =      7.23

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    STORM FREQUENCY            100  YR           L            .38  MI
    STORM DURATION              24  HR           LCA          .17  MI
    WATERSHED AREA            .056  SQ MI        DH           19.  FT
    MEAN SEASONAL RAINFALL   14.00  IN           N          .029
    AREA-RAINFALL FACTOR      1.00               S-CURVE   WC MTN CURVE
    STORM RAINFALL AMOUNT     4.26  IN           LAG-TIME     .12  HR
    INFILTRATION RATE         .050  IN/HR        C SUB T      .70

UNIT HYDROGRAPH *****  NO. OF POINTS =    4     DT =   15.  MIN
   109.     23.     11.      2.

FLOOD HYDROGRAPH *****  NO. OF POINTS =   99     DT =   15.  MIN
     0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
     0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
     0.      1.      3.      3.      4.      4.      5.      5.      5.      5.
     5.      5.      7.      7.      9.      9.     13.     13.     37.     42.
    25.     21.     13.     12.      9.      8.      8.      8.      7.      7.
     6.      6.      5.      5.      4.      4.      4.      4.      4.      4.
     4.      4.      3.      3.      3.      3.      3.      3.      3.      3.
     3.      3.      2.      2.      2.      2.      2.      2.      2.      2.
     2.      2.      2.      2.      2.      2.      2.      2.      2.      2.
     2.      2.      1.      1.      1.      1.      1.      0.      0.

PEAK FLOW (IN CFS) =    43.  AT  10.00  HR     VOLUME (IN AC-FT) =      8.97

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Post B2

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    STORM FREQUENCY             10  YR           L            .48  MI
    STORM DURATION               3  HR           LCA          .17  MI
    WATERSHED AREA            .043  SQ MI        DH           26.  FT
    MEAN SEASONAL RAINFALL   14.00  IN           N          .031
    AREA-RAINFALL FACTOR      1.00               S-CURVE   WC MTN CURVE
    STORM RAINFALL AMOUNT     1.16  IN           LAG-TIME     .13  HR
    INFILTRATION RATE         .050  IN/HR        C SUB T      .74

UNIT HYDROGRAPH *****  NO. OF POINTS =    5     DT =   15.  MIN
    80.     19.      9.      4.      0.

FLOOD HYDROGRAPH *****  NO. OF POINTS =   16     DT =   15.  MIN
     0.      0.      0.      0.      0.      4.      5.      7.     11.     12.
    28.     12.      4.      2.      1.      0.

PEAK FLOW (IN CFS) =    28.  AT   2.71  HR     VOLUME (IN AC-FT) =      1.81

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    STORM FREQUENCY             10  YR           L            .48  MI
    STORM DURATION               6  HR           LCA          .17  MI
    WATERSHED AREA            .043  SQ MI        DH           26.  FT
    MEAN SEASONAL RAINFALL   14.00  IN           N          .031
    AREA-RAINFALL FACTOR      1.00               S-CURVE   WC MTN CURVE
    STORM RAINFALL AMOUNT     1.58  IN           LAG-TIME     .13  HR
    INFILTRATION RATE         .050  IN/HR        C SUB T      .74
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UNIT HYDROGRAPH *****  NO. OF POINTS =    5     DT =   15.  MIN
    80.     19.      9.      4.      0.

FLOOD HYDROGRAPH *****  NO. OF POINTS =   28     DT =   15.  MIN
     0.      0.      0.      0.      0.      2.      3.      3.      6.      6.
     4.      4.      3.      3.      6.     11.     26.     14.      9.      6.
     4.      3.      3.      3.      1.      0.      0.      0.

PEAK FLOW (IN CFS) =    26.  AT   4.28  HR     VOLUME (IN AC-FT) =      2.50

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    STORM FREQUENCY              10  YR            L            .48  MI
    STORM DURATION               12  HR            LCA          .17  MI
    WATERSHED AREA             .043  SQ MI         DH           26.  FT
    MEAN SEASONAL RAINFALL   14.00  IN            N          .031
    AREA-RAINFALL FACTOR       1.00                S-CURVE   WC MTN CURVE
    STORM RAINFALL AMOUNT      2.14  IN            LAG-TIME     .13  HR
    INFILTRATION RATE          .050  IN/HR         C SUB T      .74

UNIT HYDROGRAPH *****  NO. OF POINTS =    5     DT =   15.  MIN
    80.     19.      9.      4.      0.

FLOOD HYDROGRAPH *****  NO. OF POINTS =   52     DT =   15.  MIN
     0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
     0.      0.      0.      0.      0.      0.      1.      3.      4.      5.
     6.      8.     10.     27.     16.     11.      8.      6.      5.      4.
     4.      3.      3.      3.      3.      3.      2.      2.      2.      2.
     2.      2.      1.      1.      1.      1.      1.      1.      0.      0.
     0.      0.

PEAK FLOW (IN CFS) =    27.  AT   6.05  HR     VOLUME (IN AC-FT) =      3.20

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    STORM FREQUENCY              10  YR            L            .48  MI
    STORM DURATION               24  HR            LCA          .17  MI
    WATERSHED AREA             .043  SQ MI         DH           26.  FT
    MEAN SEASONAL RAINFALL   14.00  IN            N          .031
    AREA-RAINFALL FACTOR       1.00                S-CURVE   WC MTN CURVE
    STORM RAINFALL AMOUNT      2.85  IN            LAG-TIME     .13  HR
    INFILTRATION RATE          .050  IN/HR         C SUB T      .74

UNIT HYDROGRAPH *****  NO. OF POINTS =    5     DT =   15.  MIN
    80.     19.      9.      4.      0.

FLOOD HYDROGRAPH *****  NO. OF POINTS =  100     DT =   15.  MIN
     0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
     0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
     0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
     0.      0.      1.      3.      4.      4.      6.      6.     18.     21.
    12.     11.      7.      6.      4.      4.      4.      4.      3.      3.
     3.      3.      2.      2.      2.      2.      2.      2.      2.      2.
     2.      2.      1.      1.      1.      1.      1.      1.      1.      1.
     1.      1.      1.      1.      1.      1.      1.      1.      1.      1.
     1.      1.      1.      1.      1.      1.      1.      1.      0.      0.
     0.      0.      0.      0.      0.      0.      0.      0.      0.      0.

PEAK FLOW (IN CFS) =    21.  AT  10.00  HR     VOLUME (IN AC-FT) =      3.66

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    STORM FREQUENCY             100  YR            L            .48  MI
    STORM DURATION                3  HR            LCA          .17  MI
    WATERSHED AREA             .043  SQ MI         DH           26.  FT
    MEAN SEASONAL RAINFALL   14.00  IN            N          .031
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    AREA-RAINFALL FACTOR        1.00                S-CURVE    WC MTN CURVE
    STORM RAINFALL AMOUNT       1.68  IN            LAG-TIME      .13  HR
    INFILTRATION RATE           .050  IN/HR         C SUB T       .74

 UNIT HYDROGRAPH *****  NO. OF POINTS =    5     DT =   15.  MIN
    80.     19.      9.      4.      0.

 FLOOD HYDROGRAPH *****  NO. OF POINTS =   16     DT =   15.  MIN
     0.      0.      0.      0.      4.     14.     10.     12.     17.     18.
    41.     19.      7.      3.      1.      0.

 PEAK FLOW (IN CFS) =    41.  AT   2.70  HR     VOLUME (IN AC-FT) =      3.02

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    STORM FREQUENCY            100  YR            L             .48  MI
    STORM DURATION               6  HR            LCA           .17  MI
    WATERSHED AREA            .043  SQ MI         DH            26.  FT
    MEAN SEASONAL RAINFALL   14.00  IN            N            .031
    AREA-RAINFALL FACTOR       1.00               S-CURVE    WC MTN CURVE
    STORM RAINFALL AMOUNT      2.33  IN            LAG-TIME      .13  HR
    INFILTRATION RATE          .050  IN/HR         C SUB T       .74

 UNIT HYDROGRAPH *****  NO. OF POINTS =    5     DT =   15.  MIN
    80.     19.      9.      4.      0.

 FLOOD HYDROGRAPH *****  NO. OF POINTS =   28     DT =   15.  MIN
     0.      0.      0.      0.     10.      7.      6.      6.     10.     10.
     7.      6.      5.      5.     10.     16.     39.     21.     13.      9.
     6.      5.      5.      4.      1.      1.      0.      0.

 PEAK FLOW (IN CFS) =    39.  AT   4.28  HR     VOLUME (IN AC-FT) =      4.20

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    STORM FREQUENCY            100  YR            L             .48  MI
    STORM DURATION              12  HR            LCA           .17  MI
    WATERSHED AREA            .043  SQ MI         DH            26.  FT
    MEAN SEASONAL RAINFALL   14.00  IN            N            .031
    AREA-RAINFALL FACTOR       1.00               S-CURVE    WC MTN CURVE
    STORM RAINFALL AMOUNT      3.17  IN            LAG-TIME      .13  HR
    INFILTRATION RATE          .050  IN/HR         C SUB T       .74

 UNIT HYDROGRAPH *****  NO. OF POINTS =    5     DT =   15.  MIN
    80.     19.      9.      4.      0.

 FLOOD HYDROGRAPH *****  NO. OF POINTS =   52     DT =   15.  MIN
     0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
     0.      2.      4.      4.      5.      5.      5.      6.      7.      9.
    10.     12.     15.     40.     25.     16.     12.     10.      8.      7.
     6.      5.      5.      5.      5.      5.      4.      3.      3.      3.
     3.      3.      3.      3.      2.      2.      2.      2.      1.      0.
     0.      0.

 PEAK FLOW (IN CFS) =    40.  AT   6.05  HR     VOLUME (IN AC-FT) =      5.56

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    STORM FREQUENCY            100  YR            L             .48  MI
    STORM DURATION              24  HR            LCA           .17  MI
    WATERSHED AREA            .043  SQ MI         DH            26.  FT
    MEAN SEASONAL RAINFALL   14.00  IN            N            .031
    AREA-RAINFALL FACTOR       1.00               S-CURVE    WC MTN CURVE
    STORM RAINFALL AMOUNT      4.26  IN            LAG-TIME      .13  HR
    INFILTRATION RATE          .050  IN/HR         C SUB T       .74

 UNIT HYDROGRAPH *****  NO. OF POINTS =    5     DT =   15.  MIN
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    80.      19.       9.       4.       0.

FLOOD HYDROGRAPH *****  NO. OF POINTS =  100     DT =   15.  MIN
     0.       0.       0.       0.       0.       0.       0.       0.       0.       0.
     0.       0.       0.       0.       0.       0.       0.       0.       0.       0.
     0.       0.       2.       3.       3.       3.       3.       4.       4.       4.
     4.       4.       5.       5.       7.       7.      10.      10.      28.      32.
    19.      17.      11.       9.       7.       6.       6.       6.       5.       5.
     5.       5.       4.       4.       3.       3.       3.       3.       3.       3.
     3.       3.       3.       3.       2.       2.       2.       2.       2.       2.
     2.       2.       2.       2.       2.       2.       2.       2.       2.       2.
     1.       1.       1.       1.       1.       1.       1.       1.       1.       1.
     1.       1.       1.       1.       1.       1.       0.       0.       0.       0.

PEAK FLOW (IN CFS) =    32.  AT  10.00  HR     VOLUME (IN AC-FT) =      6.89

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Post B3

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    STORM FREQUENCY              10  YR            L             .51  MI
    STORM DURATION                3  HR            LCA           .31  MI
    WATERSHED AREA             .044  SQ MI         DH            23.  FT
    MEAN SEASONAL RAINFALL    14.00  IN            N            .031
    AREA-RAINFALL FACTOR       1.00               S-CURVE   WC MTN CURVE
    STORM RAINFALL AMOUNT      1.16  IN            LAG-TIME      .18  HR
    INFILTRATION RATE          .050  IN/HR         C SUB T       .74

UNIT HYDROGRAPH *****  NO. OF POINTS =    7     DT =   15.  MIN
    71.      22.      10.       6.       4.       1.       0.

FLOOD HYDROGRAPH *****  NO. OF POINTS =   18     DT =   15.  MIN
     0.       0.       0.       0.       0.       3.       5.       7.      10.      12.
    26.      14.       6.       3.       2.       1.       0.       0.

PEAK FLOW (IN CFS) =    26.  AT   2.72  HR     VOLUME (IN AC-FT) =      1.86

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    STORM FREQUENCY              10  YR            L             .51  MI
    STORM DURATION                6  HR            LCA           .31  MI
    WATERSHED AREA             .044  SQ MI         DH            23.  FT
    MEAN SEASONAL RAINFALL    14.00  IN            N            .031
    AREA-RAINFALL FACTOR       1.00               S-CURVE   WC MTN CURVE
    STORM RAINFALL AMOUNT      1.58  IN            LAG-TIME      .18  HR
    INFILTRATION RATE          .050  IN/HR         C SUB T       .74

UNIT HYDROGRAPH *****  NO. OF POINTS =    7     DT =   15.  MIN
    71.      22.      10.       6.       4.       1.       0.

FLOOD HYDROGRAPH *****  NO. OF POINTS =   30     DT =   15.  MIN
     0.       0.       0.       0.       0.       2.       2.       3.       6.       6.
     4.       4.       3.       3.       6.      10.      24.      14.      10.       7.
     5.       4.       3.       3.       1.       1.       0.       0.       0.       0.

PEAK FLOW (IN CFS) =    24.  AT   4.30  HR     VOLUME (IN AC-FT) =      2.56

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    STORM FREQUENCY              10  YR            L             .51  MI
    STORM DURATION               12  HR            LCA           .31  MI
    WATERSHED AREA             .044  SQ MI         DH            23.  FT
    MEAN SEASONAL RAINFALL    14.00  IN            N            .031
    AREA-RAINFALL FACTOR       1.00               S-CURVE   WC MTN CURVE
    STORM RAINFALL AMOUNT      2.14  IN            LAG-TIME      .18  HR
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    INFILTRATION RATE          .050  IN/HR          C SUB T      .74

 UNIT HYDROGRAPH *****  NO. OF POINTS =    7     DT =   15.  MIN
    71.     22.     10.      6.      4.      1.      0.

 FLOOD HYDROGRAPH *****  NO. OF POINTS =   54     DT =   15.  MIN
     0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
     0.      0.      0.      0.      0.      0.      1.      3.      4.      5.
     6.      8.      9.     25.     17.     11.      9.      7.      6.      5.
     4.      4.      3.      3.      3.      3.      2.      2.      2.      2.
     2.      2.      2.      2.      1.      1.      1.      1.      1.      0.
     0.      0.      0.      0.

 PEAK FLOW (IN CFS) =    25.  AT   6.07  HR     VOLUME (IN AC-FT) =      3.28

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    STORM FREQUENCY             10  YR            L            .51  MI
    STORM DURATION              24  HR            LCA          .31  MI
    WATERSHED AREA            .044  SQ MI         DH           23.  FT
    MEAN SEASONAL RAINFALL  14.00   IN            N          .031
    AREA-RAINFALL FACTOR      1.00                S-CURVE   WC MTN CURVE
    STORM RAINFALL AMOUNT     2.85  IN            LAG-TIME     .18  HR
    INFILTRATION RATE         .050  IN/HR         C SUB T      .74

 UNIT HYDROGRAPH *****  NO. OF POINTS =    7     DT =   15.  MIN
    71.     22.     10.      6.      4.      1.      0.

 FLOOD HYDROGRAPH *****  NO. OF POINTS =  102     DT =   15.  MIN
     0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
     0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
     0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
     0.      0.      1.      2.      4.      4.      6.      6.     17.     20.
    13.     11.      8.      7.      5.      4.      4.      4.      3.      3.
     3.      3.      2.      2.      2.      2.      2.      2.      2.      2.
     2.      2.      1.      1.      1.      1.      1.      1.      1.      1.
     1.      1.      1.      1.      1.      1.      1.      1.      1.      1.
     1.      1.      1.      1.      1.      1.      1.      1.      0.      0.
     0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
     0.      0.

 PEAK FLOW (IN CFS) =    20.  AT  10.02  HR     VOLUME (IN AC-FT) =      3.76

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    STORM FREQUENCY            100  YR            L            .51  MI
    STORM DURATION               3  HR            LCA          .31  MI
    WATERSHED AREA            .044  SQ MI         DH           23.  FT
    MEAN SEASONAL RAINFALL  14.00   IN            N          .031
    AREA-RAINFALL FACTOR      1.00                S-CURVE   WC MTN CURVE
    STORM RAINFALL AMOUNT     1.68  IN            LAG-TIME     .18  HR
    INFILTRATION RATE         .050  IN/HR         C SUB T      .74

 UNIT HYDROGRAPH *****  NO. OF POINTS =    7     DT =   15.  MIN
    71.     22.     10.      6.      4.      1.      0.

 FLOOD HYDROGRAPH *****  NO. OF POINTS =   18     DT =   15.  MIN
     0.      0.      0.      0.      4.     13.     10.     11.     16.     18.
    39.     20.      8.      5.      3.      1.      0.      0.

 PEAK FLOW (IN CFS) =    39.  AT   2.72  HR     VOLUME (IN AC-FT) =      3.09

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    STORM FREQUENCY            100  YR            L            .51  MI
    STORM DURATION               6  HR            LCA          .31  MI
    WATERSHED AREA            .044  SQ MI         DH           23.  FT
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MEAN SEASONAL RAINFALL	14.00	IN	N	.031	
AREA-RAINFALL FACTOR	1.00		S-CURVE	WC MTN CURVE	
STORM RAINFALL AMOUNT	2.33	IN	LAG-TIME	.18	HR
INFILTRATION RATE	.050	IN/HR	C SUB T	.74	

UNIT HYDROGRAPH ***** NO. OF POINTS = 7 DT = 15. MIN

71. 22. 10. 6. 4. 1. 0.

FLOOD HYDROGRAPH ***** NO. OF POINTS = 30 DT = 15. MIN

0.	0.	0.	0.	9.	7.	6.	6.	9.	10.
7.	6.	5.	5.	10.	16.	36.	22.	15.	11.
8.	6.	5.	5.	2.	1.	1.	0.	0.	0.

PEAK FLOW (IN CFS) = 36. AT 4.30 HR VOLUME (IN AC-FT) = 4.31

STORM FREQUENCY	100	YR	L	.51	MI
STORM DURATION	12	HR	LCA	.31	MI
WATERSHED AREA	.044	SQ MI	DH	23.	FT
MEAN SEASONAL RAINFALL	14.00	IN	N	.031	
AREA-RAINFALL FACTOR	1.00		S-CURVE	WC MTN CURVE	
STORM RAINFALL AMOUNT	3.17	IN	LAG-TIME	.18	HR
INFILTRATION RATE	.050	IN/HR	C SUB T	.74	

UNIT HYDROGRAPH ***** NO. OF POINTS = 7 DT = 15. MIN

71. 22. 10. 6. 4. 1. 0.

FLOOD HYDROGRAPH ***** NO. OF POINTS = 54 DT = 15. MIN

0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	2.	4.	4.	5.	5.	5.	6.	7.	8.
9.	12.	15.	37.	26.	17.	14.	11.	9.	7.
7.	6.	5.	5.	5.	5.	4.	3.	3.	3.
3.	3.	3.	3.	3.	2.	2.	2.	1.	1.
0.	0.	0.	0.						

PEAK FLOW (IN CFS) = 37. AT 6.07 HR VOLUME (IN AC-FT) = 5.70

STORM FREQUENCY	100	YR	L	.51	MI
STORM DURATION	24	HR	LCA	.31	MI
WATERSHED AREA	.044	SQ MI	DH	23.	FT
MEAN SEASONAL RAINFALL	14.00	IN	N	.031	
AREA-RAINFALL FACTOR	1.00		S-CURVE	WC MTN CURVE	
STORM RAINFALL AMOUNT	4.26	IN	LAG-TIME	.18	HR
INFILTRATION RATE	.050	IN/HR	C SUB T	.74	

UNIT HYDROGRAPH ***** NO. OF POINTS = 7 DT = 15. MIN

71. 22. 10. 6. 4. 1. 0.

FLOOD HYDROGRAPH ***** NO. OF POINTS = 102 DT = 15. MIN

0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	2.	2.	3.	3.	3.	4.	4.	4.
4.	4.	5.	5.	6.	7.	9.	10.	26.	31.
20.	17.	13.	11.	8.	7.	6.	6.	5.	5.
5.	5.	4.	4.	4.	4.	3.	3.	3.	3.
3.	3.	3.	3.	3.	2.	2.	2.	2.	2.
2.	2.	2.	2.	2.	2.	2.	2.	2.	2.
2.	2.	1.	1.	1.	1.	1.	1.	1.	1.
1.	1.	1.	1.	1.	1.	1.	0.	0.	0.
0.	0.								

PEAK FLOW (IN CFS) = 31. AT 10.02 HR VOLUME (IN AC-FT) = 7.06

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Post E

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STORM FREQUENCY	10	YR	L	.72	MI
STORM DURATION	3	HR	LCA	.38	MI
WATERSHED AREA	.078	SQ MI	DH	37.	FT
MEAN SEASONAL RAINFALL	14.00	IN	N	.030	
AREA-RAINFALL FACTOR	1.00		S-CURVE	WC MTN CURVE	
STORM RAINFALL AMOUNT	1.16	IN	LAG-TIME	.21	HR
INFILTRATION RATE	.080	IN/HR	C SUB T	.72	

UNIT HYDROGRAPH ***** NO. OF POINTS = 7 DT = 15. MIN

115. 43. 19. 11. 8. 4. 1.

FLOOD HYDROGRAPH ***** NO. OF POINTS = 18 DT = 15. MIN

0. 0. 0. 0. 0. 0. 5. 9. 15. 19.
42. 23. 11. 6. 4. 2. 1. 0.

PEAK FLOW (IN CFS) = 42. AT 2.74 HR VOLUME (IN AC-FT) = 2.92

STORM FREQUENCY	10	YR	L	.72	MI
STORM DURATION	6	HR	LCA	.38	MI
WATERSHED AREA	.078	SQ MI	DH	37.	FT
MEAN SEASONAL RAINFALL	14.00	IN	N	.030	
AREA-RAINFALL FACTOR	1.00		S-CURVE	WC MTN CURVE	
STORM RAINFALL AMOUNT	1.58	IN	LAG-TIME	.21	HR
INFILTRATION RATE	.080	IN/HR	C SUB T	.72	

UNIT HYDROGRAPH ***** NO. OF POINTS = 7 DT = 15. MIN

115. 43. 19. 11. 8. 4. 1.

FLOOD HYDROGRAPH ***** NO. OF POINTS = 30 DT = 15. MIN

0. 0. 0. 0. 0. 0. 0. 2. 7. 9.
6. 5. 4. 5. 9. 16. 39. 24. 16. 11.
8. 6. 5. 4. 2. 1. 1. 1. 0. 0.

PEAK FLOW (IN CFS) = 39. AT 4.31 HR VOLUME (IN AC-FT) = 3.79

STORM FREQUENCY	10	YR	L	.72	MI
STORM DURATION	12	HR	LCA	.38	MI
WATERSHED AREA	.078	SQ MI	DH	37.	FT
MEAN SEASONAL RAINFALL	14.00	IN	N	.030	
AREA-RAINFALL FACTOR	1.00		S-CURVE	WC MTN CURVE	
STORM RAINFALL AMOUNT	2.14	IN	LAG-TIME	.21	HR
INFILTRATION RATE	.080	IN/HR	C SUB T	.72	

UNIT HYDROGRAPH ***** NO. OF POINTS = 7 DT = 15. MIN

115. 43. 19. 11. 8. 4. 1.

FLOOD HYDROGRAPH ***** NO. OF POINTS = 54 DT = 15. MIN

0. 0. 0. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 0. 0. 0. 0. 0. 0.
4. 9. 14. 39. 28. 19. 14. 12. 10. 7.
6. 5. 4. 4. 4. 3. 3. 2. 2. 2.
2. 1. 1. 1. 1. 1. 1. 0. 0. 0.
0. 0. 0. 0.

PEAK FLOW (IN CFS) = 39. AT 6.09 HR VOLUME (IN AC-FT) = 4.34

STORM FREQUENCY	10	YR	L	.72	MI
STORM DURATION	24	HR	LCA	.38	MI
WATERSHED AREA	.078	SQ MI	DH	37.	FT
MEAN SEASONAL RAINFALL	14.00	IN	N	.030	
AREA-RAINFALL FACTOR	1.00		S-CURVE	WC MTN CURVE	
STORM RAINFALL AMOUNT	2.85	IN	LAG-TIME	.21	HR
INFILTRATION RATE	.080	IN/HR	C SUB T	.72	

UNIT HYDROGRAPH ***** NO. OF POINTS = 7 DT = 15. MIN

115. 43. 19. 11. 8. 4. 1.

FLOOD HYDROGRAPH ***** NO. OF POINTS = 102 DT = 15. MIN

0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	5.	24.	32.
21.	18.	13.	11.	8.	7.	6.	5.	4.	4.
4.	3.	3.	3.	2.	2.	2.	2.	1.	1.
1.	1.	1.	1.	1.	1.	1.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.								

PEAK FLOW (IN CFS) = 32. AT 10.05 HR VOLUME (IN AC-FT) = 4.49

STORM FREQUENCY	100	YR	L	.72	MI
STORM DURATION	3	HR	LCA	.38	MI
WATERSHED AREA	.078	SQ MI	DH	37.	FT
MEAN SEASONAL RAINFALL	14.00	IN	N	.030	
AREA-RAINFALL FACTOR	1.00		S-CURVE	WC MTN CURVE	
STORM RAINFALL AMOUNT	1.68	IN	LAG-TIME	.21	HR
INFILTRATION RATE	.080	IN/HR	C SUB T	.72	

UNIT HYDROGRAPH ***** NO. OF POINTS = 7 DT = 15. MIN

115. 43. 19. 11. 8. 4. 1.

FLOOD HYDROGRAPH ***** NO. OF POINTS = 18 DT = 15. MIN

0.	0.	0.	0.	2.	18.	15.	18.	26.	30.
64.	36.	16.	9.	6.	3.	1.	0.		

PEAK FLOW (IN CFS) = 64. AT 2.73 HR VOLUME (IN AC-FT) = 5.11

STORM FREQUENCY	100	YR	L	.72	MI
STORM DURATION	6	HR	LCA	.38	MI
WATERSHED AREA	.078	SQ MI	DH	37.	FT
MEAN SEASONAL RAINFALL	14.00	IN	N	.030	
AREA-RAINFALL FACTOR	1.00		S-CURVE	WC MTN CURVE	
STORM RAINFALL AMOUNT	2.33	IN	LAG-TIME	.21	HR
INFILTRATION RATE	.080	IN/HR	C SUB T	.72	

UNIT HYDROGRAPH ***** NO. OF POINTS = 7 DT = 15. MIN

115. 43. 19. 11. 8. 4. 1.

FLOOD HYDROGRAPH ***** NO. OF POINTS = 30 DT = 15. MIN

0.	0.	0.	0.	11.	10.	8.	8.	15.	15.
11.	10.	8.	8.	15.	25.	59.	38.	25.	18.
14.	11.	8.	7.	3.	2.	1.	1.	1.	0.

PEAK FLOW (IN CFS) = 59. AT 4.31 HR VOLUME (IN AC-FT) = 6.89

STORM FREQUENCY	100	YR	L	.72	MI
STORM DURATION	12	HR	LCA	.38	MI
WATERSHED AREA	.078	SQ MI	DH	37.	FT
MEAN SEASONAL RAINFALL	14.00	IN	N	.030	
AREA-RAINFALL FACTOR	1.00		S-CURVE	WC MTN CURVE	
STORM RAINFALL AMOUNT	3.17	IN	LAG-TIME	.21	HR
INFILTRATION RATE	.080	IN/HR	C SUB T	.72	

UNIT HYDROGRAPH ***** NO. OF POINTS = 7 DT = 15. MIN

115. 43. 19. 11. 8. 4. 1.

FLOOD HYDROGRAPH ***** NO. OF POINTS = 54 DT = 15. MIN

0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	4.	6.	7.	8.	10.	13.
15.	19.	24.	61.	44.	30.	23.	20.	17.	13.
11.	9.	8.	8.	7.	7.	6.	5.	4.	4.
4.	4.	4.	3.	3.	3.	2.	2.	1.	1.
1.	1.	0.	0.						

PEAK FLOW (IN CFS) = 61. AT 6.08 HR VOLUME (IN AC-FT) = 8.60

STORM FREQUENCY	100	YR	L	.72	MI
STORM DURATION	24	HR	LCA	.38	MI
WATERSHED AREA	.078	SQ MI	DH	37.	FT
MEAN SEASONAL RAINFALL	14.00	IN	N	.030	
AREA-RAINFALL FACTOR	1.00		S-CURVE	WC MTN CURVE	
STORM RAINFALL AMOUNT	4.26	IN	LAG-TIME	.21	HR
INFILTRATION RATE	.080	IN/HR	C SUB T	.72	

UNIT HYDROGRAPH ***** NO. OF POINTS = 7 DT = 15. MIN

115. 43. 19. 11. 8. 4. 1.

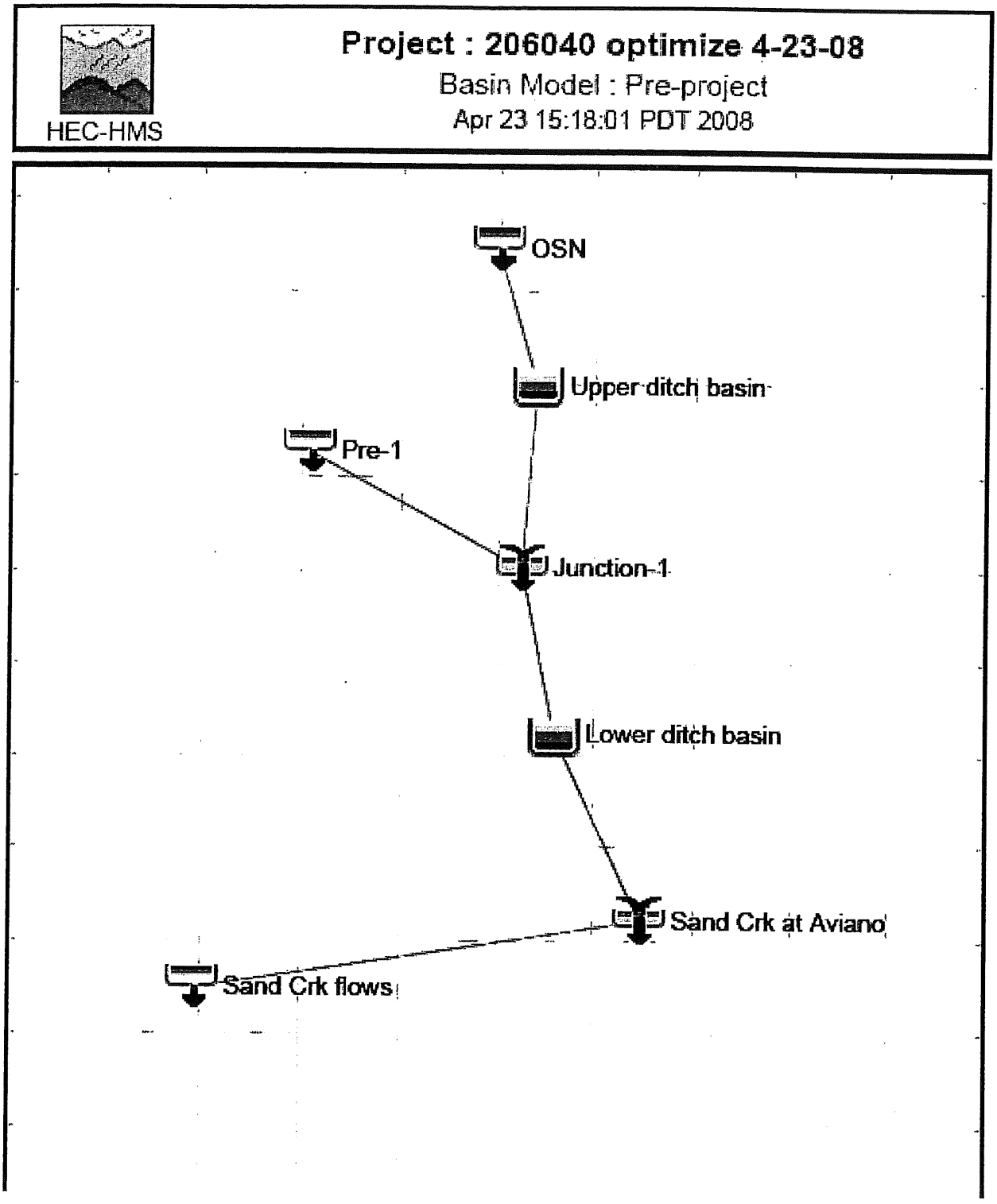
FLOOD HYDROGRAPH ***** NO. OF POINTS = 102 DT = 15. MIN

0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	2.
4.	5.	7.	8.	10.	11.	15.	16.	42.	51.
35.	30.	22.	19.	14.	12.	10.	10.	8.	8.
7.	7.	6.	6.	5.	5.	4.	4.	4.	4.
4.	4.	3.	3.	3.	3.	3.	2.	2.	2.
2.	2.	2.	2.	2.	2.	2.	2.	2.	2.
1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
1.	1.	1.	0.	0.	0.	0.	0.	0.	0.
0.	0.								

PEAK FLOW (IN CFS) = 51. AT 10.03 HR VOLUME (IN AC-FT) = 9.55

APPENDIX C

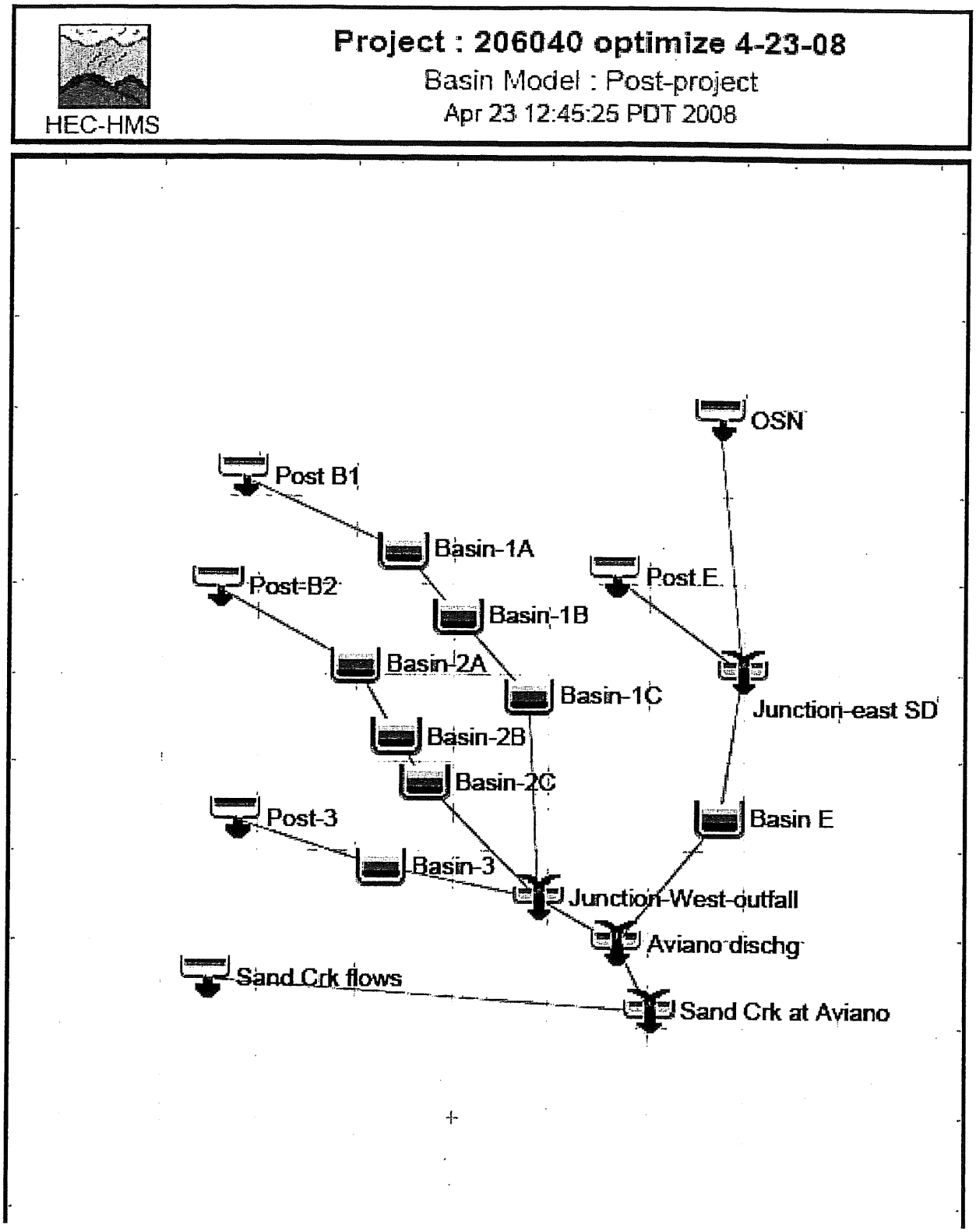
HEC-HMS model output



Balance Hydrologics, Inc.

Figure C1. Pre-project drainage network, Aviano project site, City of Antioch

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Balance Hydrologics, Inc.

Figure C2. Post-project drainage network, Aviano project, City of Antioch

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Project: Aviano Simulation Run: Pre 100-y 12-h

Start of Run: 01Jan2020, 00:00 Basin Model: Pre-project
End of Run: 06Jan2020, 00:00 Meteorologic Model: Met 1
Compute Time: 20May2008, 14:52:37 Control Specifications: 5-day

Volume Units: AC-FT

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
Junction-1	0.357	200.5	01Jan2020, 06:15	30.5
Lower ditch basin	0.357	199.9	01Jan2020, 06:15	30.6
OSN	0.135	116.0	01Jan2020, 06:00	15.9
Pre-1	0.222	110.0	01Jan2020, 06:15	14.6
Sand Crk at Aviano	15.107	3054.2	01Jan2020, 07:30	1678.4
Sand Crk flows	14.750	2991.0	01Jan2020, 07:30	1647.8
Upper ditch basin	0.135	90.5	01Jan2020, 06:15	15.9

Project : Aviano Simulation Run : Pre 100-y 12-h Reservoir: Lower ditch basin

Start of Run :	01Jan2020, 00:00	Basin Model :	Pre-project
End of Run :	06Jan2020, 00:00	Meteorologic Model :	Met 1
Compute Time :	20May2008, 14:52:37	Control Specifications :	5-day

Volume Units : AC-FT

Computed Results

Peak Inflow :	200.5 (CFS)	Date/Time of Peak Inflow :	01Jan2020, 06:15
Peak Outflow :	199.9 (CFS)	Date/Time of Peak Outflow :	01Jan2020, 06:15
Total Inflow :	30.5 (AC-FT)	Peak Storage :	2.5 (AC-FT)
Total Outflow :	30.6 (AC-FT)	Peak Elevation :	168.7 (FT)

Project: Aviano Simulation Run: Post 100-y 12-h

Start of Run: 01Jan2020, 00:00 Basin Model: Post-project
End of Run: 02Jan2020, 00:00 Meteorologic Model: Met 1
Compute Time: 20May2008, 13:21:51 Control Specifications: 1-day

Volume Units: AC-FT

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
Aviano dischg	0.356	88.4	01Jan2020, 06:30	30.4
Basin-1A	0.056	42.5	01Jan2020, 06:15	7.1
Basin-1B	0.056	5.1	01Jan2020, 09:30	5.0
Basin-1C	0.056	5.0	01Jan2020, 10:15	4.0
Basin-2A	0.043	29.5	01Jan2020, 06:15	5.5
Basin-2B	0.043	23.4	01Jan2020, 06:30	5.3
Basin-2C	0.043	18.4	01Jan2020, 07:00	4.8
Basin-3	0.044	3.0	01Jan2020, 11:15	1.8
East Basin	0.213	85.1	01Jan2020, 06:30	19.9
Junction-east SD	0.213	177.0	01Jan2020, 06:00	24.4
Junction-West-outfa	0.143	19.3	01Jan2020, 07:00	10.5
OSN	0.135	116.0	01Jan2020, 06:00	15.9
Post-3	0.044	37.0	01Jan2020, 06:00	5.6
Post B1	0.056	54.0	01Jan2020, 06:00	7.2
Post-B2	0.043	40.0	01Jan2020, 06:00	5.5
Post E	0.078	61.0	01Jan2020, 06:00	8.5
Sand Crk at Avianc	15.106	3046.6	01Jan2020, 07:30	1376.8
Sand Crk flows	14.750	2991.0	01Jan2020, 07:30	1346.4

Project : Aviano Simulation Run : Post 100-y 12-h Reservoir: Basin-1B

Start of Run :	01Jan2020, 00:00	Basin Model :	Post-project
End of Run :	02Jan2020, 00:00	Meteorologic Model :	Met 1
Compute Time :	20May2008, 13:21:51	Control Specifications :	1-day

Volume Units : AC-FT

Computed Results

Peak Inflow :	42.5 (CFS)	Date/Time of Peak Inflow :	01Jan2020, 06:15
Peak Outflow :	5.1 (CFS)	Date/Time of Peak Outflow :	01Jan2020, 09:30
Total Inflow :	7.1 (AC-FT)	Peak Storage :	3.5 (AC-FT)
Total Outflow :	5.0 (AC-FT)	Peak Elevation :	181.5 (FT)

Project : Aviano Simulation Run : Post 100-y 12-h Reservoir: Basin-2A

Start of Run :	01Jan2020, 00:00	Basin Model :	Post-project
End of Run :	02Jan2020, 00:00	Meteorologic Model :	Met 1
Compute Time :	20May2008, 13:21:51	Control Specifications :	1-day

Volume Units : AC-FT

Computed Results

Peak Inflow :	40.0 (CFS)	Date/Time of Peak Inflow :	01Jan2020, 06:00
Peak Outflow :	29.5 (CFS)	Date/Time of Peak Outflow :	01Jan2020, 06:15
Total Inflow :	5.5 (AC-FT)	Peak Storage :	1.3 (AC-FT)
Total Outflow :	5.5 (AC-FT)	Peak Elevation :	179.0 (FT)

Project : Aviano Simulation Run : Post 100-y 12-h Reservoir: Basin-2C

Start of Run :	01Jan2020, 00:00	Basin Model :	Post-project
End of Run :	02Jan2020, 00:00	Meteorologic Model :	Met 1
Compute Time :	20May2008, 13:21:51	Control Specifications :	1-day

Volume Units : AC-FT

Computed Results

Peak Inflow :	23.4 (CFS)	Date/Time of Peak Inflow :	01Jan2020, 06:30
Peak Outflow :	18.4 (CFS)	Date/Time of Peak Outflow :	01Jan2020, 07:00
Total Inflow :	5.3 (AC-FT)	Peak Storage :	1.5 (AC-FT)
Total Outflow :	4.8 (AC-FT)	Peak Elevation :	175.1 (FT)

Project : Aviano Simulation Run : Post 100-y 12-h Reservoir: East Basin

Start of Run :	01Jan2020, 00:00	Basin Model :	Post-project
End of Run :	02Jan2020, 00:00	Meteorologic Model :	Met 1
Compute Time :	20May2008, 13:21:51	Control Specifications :	1-day

Volume Units : AC-FT

Computed Results

Peak Inflow :	177.0 (CFS)	Date/Time of Peak Inflow :	01Jan2020, 06:00
Peak Outflow :	85.1 (CFS)	Date/Time of Peak Outflow :	01Jan2020, 06:30
Total Inflow :	24.4 (AC-FT)	Peak Storage :	10.9 (AC-FT)
Total Outflow :	19.9 (AC-FT)	Peak Elevation :	169.8 (FT)

APPENDIX D

HSPF model

```
RUN

GLOBAL
  UCI Created by WinHSPF for 206040
  START       1950/10/01 00:00  END    1980/09/30 00:00
  RUN INTERP OUTPT LEVELS    4    0
  RESUME     0 RUN     1                          UNITS    1
END GLOBAL

FILES
<FILE>  <UN#>***<----FILE NAME---------------------------------------------->
MESSU       24   PO0331V2.ech
            91   PO0331V2.out
WDM1        25   aviano_prec.wdm
WDM2        26   ccchmp_evap.wdm
WDM3        27   PO0331V2.wdm
BINO        92   PO0331V2.hbn
END FILES

OPN SEQUENCE
    INGRP               INDELT 00:01
      PERLND     301
      IMPLND     401
      RCHRES       1
      PERLND     302
      IMPLND     402
      RCHRES       2
      RCHRES       6
      RCHRES       9
      PERLND     303
      IMPLND     403
      RCHRES       3
      RCHRES       7
      RCHRES       8
      PERLND     304
      IMPLND     404
      RCHRES       4
      RCHRES       5
    END INGRP
END OPN SEQUENCE

PERLND
  ACTIVITY
*** <PLS >              Active Sections                          ***
*** x -  x ATMP SNOW PWAT  SED  PST  PWG PQAL MSTL PEST NITR PHOS TRAC ***
  301  304    0    0    1    0    0    0    0    0    0    0    0    0
  END ACTIVITY

  PRINT-INFO
*** < PLS>                      Print-flags                                PIVL  PYR
*** x  - x ATMP SNOW PWAT  SED  PST  PWG PQAL MSTL PEST NITR PHOS TRAC
  301  304    4    4    2    4    4    4    4    4    4    4    4    4   60    9
  END PRINT-INFO

  BINARY-INFO
*** < PLS>                Binary Output Flags                          PIVL  PYR
*** x  - x ATMP SNOW PWAT  SED  PST  PWG PQAL MSTL PEST NITR PHOS TRAC
  301  304    4    4    2    4    4    4    4    4    4    4    4    4   60    9
  END BINARY-INFO

  GEN-INFO
***             Name                    Unit-systems   Printer BinaryOut
*** <PLS >                                  t-series Engl Metr Engl Metr
*** x -  x                                    in  out
  301  304                                     1    1    0    0   92    0
  END GEN-INFO

  PWAT-PARM1
*** <PLS >                  Flags
*** x -  x CSNO RTOP UZFG  VCS  VUZ  VNN VIFW VIRC  VLE IFFC  HWT IRRG IFRD
  301  304    0    1    1    1    0    0    0    0    1    1    0    0    0
  END PWAT-PARM1

  PWAT-PARM2
*** < PLS>    FOREST      LZSN     INFILT       LSUR      SLSUR      KVARY      AGWRC
*** x  - x                (in)    (in/hr)       (ft)                 (1/in)    (1/day)
  301  304        0.        7.       0.03        700.       0.01         0.      0.95

PO0331V2.uci
```

```
  IWAT-STATE1
*** <ILS >  IWATER state variables (inches)
*** x -  x      RETS      SURS
  401  404     0.001     0.001
  END IWAT-STATE1

END IMPLND

RCHRES
  ACTIVITY
*** RCHRES  Active sections
*** x -  x HYFG ADFG CNFG HTFG SDFG GQFG OXFG NUFG PKFG PHFG
    1    9    1    0    0    0    0    0    0    0    0    0
  END ACTIVITY

  PRINT-INFO
*** RCHRES  Printout level flags
*** x -  x HYDR ADCA CONS HEAT  SED  GQL OXRX NUTR PLNK PHCB PIVL  PYR
    1    9    2    4    4    4    4    4    4    4    4    4   60    9
  END PRINT-INFO

  BINARY-INFO
*** RCHRES  Binary Output level flags
*** x -  x HYDR ADCA CONS HEAT  SED  GQL OXRX NUTR PLNK PHCB PIVL  PYR
    1    9    2    4    4    4    4    4    4    4    4    4   60    9
  END BINARY-INFO

  GEN-INFO
***             Name        Nexits   Unit Systems   Printer
*** RCHRES                             t-series  Engl Metr LKFG
*** x -  x                             in  out
    1    9                       1      1    1   91    0    0   92    0
  END GEN-INFO

  HYDR-PARM1
***         Flags for HYDR section
***RC HRES  VC A1 A2 A3  ODFVFG for each *** ODGTFG for each     FUNCT  for each
*** x  - x  FG FG FG FG  possible   exit *** possible   exit     possible   exit
    1    9   0  1  0  0    4  0  0  0  0       0  0  0  0  0       2  1  1  1  1
  END HYDR-PARM1

  HYDR-PARM2
*** RCHRES FTBW FTBU       LEN      DELTH      STCOR        KS      DB50
*** x -  x              (miles)       (ft)       (ft)                (in)
    1        0.   1.      0.01          5          0       0.5      0.01
    2        0.   2.      0.01          5          0       0.5      0.01
    3        0.   3.      0.01          5          0       0.5      0.01
    4        0.   4.      0.01          5          0       0.5      0.01
    5        0.   5.      0.01          5          0       0.5      0.01
    6        0.   6.      0.01          5          0       0.5      0.01
    7        0.   7.      0.01          5          0       0.5      0.01
    8        0.   8.      0.01          5          0       0.5      0.01
    9        0.   9.      0.01          5          0       0.5      0.01
  END HYDR-PARM2

  HYDR-INIT
***         Initial conditions for HYDR section
***RC HRES       VOL  CAT Initial value  of COLIND     initial  value  of OUTDGT
*** x  - x     ac-ft       for each possible   exit  for each possible exit,ft3
    1    9      0.01        4.2  4.5  4.5  4.5  4.2       2.1  1.2  0.5  1.2  1.8
  END HYDR-INIT

END RCHRES

FTABLES

  FTABLE      1
 rows cols                              ***
   13    4
     depth      area     volume  outflow1 ***
       0.      0.05         0.         0.
       2.      0.43       0.42       0.27
       4.      0.61       1.45       0.38
       6.      0.81       2.87       0.47
       7.      0.91       3.74       0.51
       8.      1.02        4.7       2.68
```

```
         4.       0.2      0.56      6.38
         5.      0.23      0.77      19.7
         6.      0.27      1.02      27.7
         7.      0.31      1.31      33.9
  END FTABLE  7

  FTABLE      8
 rows cols                              ***
    8    4
     depth      area    volume  outflow1 ***
        0.      0.24       0.        0.
        1.       0.3      0.27      0.18
        2.      0.36      0.59      0.27
      2.5      0.39      0.78      1.36
        3.      0.42      0.98      3.18
      3.7      0.47      1.29      4.52
        4.      0.48      1.43     13.08
        5.      0.55      1.95      60.7
  END FTABLE  8

  FTABLE      4
 rows cols                              ***
   10    4
     depth      area    volume  outflow1 ***
        0.       0.5       0.        0.
        1.      0.57      0.53      0.10
        2.      0.64      1.13      0.15
        3.      0.71      1.81      0.19
        4.      0.79      2.56      0.21
        5.      0.87      3.39      0.72
        6.      0.95       4.3      0.91
      6.4      0.99      4.69      0.97
        7.      1.04      5.29      16.8
        8.      1.12      6.37      37.8
  END FTABLE  4

  FTABLE      5
 rows cols                              ***
    2    4
     depth      area    volume  outflow1 ***
        0.      0.05       0.        0.
        5.       0.1       0.1      400.
  END FTABLE  5
END FTABLES

EXT SOURCES
<-Volume-> <Member> SsysSgap<--Mult-->Tran <-Target vols> <-Grp> <-Member-> ***
<Name>   x <Name> x tem strg<-factor->strg <Name>   x   x        <Name> x x ***
*** Met Seg AVIANO,PI:PETINP=0.8
WDM1     50 HPCP     ENGL                   PERLND 301 304 EXTNL  PREC
WDM2    302 HEVT     ENGL            0.8DIV PERLND 301 304 EXTNL  PETINP
*** Met Seg AVIANO,PI:PETINP=0.8
WDM1     50 HPCP     ENGL                   IMPLND 401 404 EXTNL  PREC
WDM2    302 HEVT     ENGL            0.8DIV IMPLND 401 404 EXTNL  PETINP
*** Met Seg AVIANO,PI:PETINP=0.8
WDM1     50 HPCP     ENGL                   RCHRES   1   8 EXTNL  PREC
WDM2    302 HEVT     ENGL            0.8DIV RCHRES   1   8 EXTNL  POTEV
END EXT SOURCES

SCHEMATIC
<-Volume->                <--Area-->     <-Volume->  <ML#> ***       <sb>
<Name>   x                <-factor->     <Name>   x        ***        x x
PERLND 301                      66.6     RCHRES   1       2
IMPLND 401                      68.3     RCHRES   1       1
PERLND 302                      16.3     RCHRES   2       2
IMPLND 402                        18     RCHRES   2       1
RCHRES   2                               RCHRES   6       3
RCHRES   6                               RCHRES   9       3
PERLND 303                      12.3     RCHRES   3       2
IMPLND 403                      13.6     RCHRES   3       1
RCHRES   3                               RCHRES   7       3
RCHRES   7                               RCHRES   8       3
PERLND 304                      13.1     RCHRES   4       2
IMPLND 404                      14.2     RCHRES   4       1
RCHRES   1                               RCHRES   5       3
RCHRES   4                               RCHRES   5       3
RCHRES   9                               RCHRES   5       3
```

APPENDIX I

ENVIRONMENTAL INVESTIGATION REPORT

ENVIRONMENTAL INVESTIGATION REPORT

WILLIAMSON PROPERTY

ANTIOCH, CONTRA COSTA COUNTY, CALIFORNIA

Prepared for

PULTE HOME CORPORATION

6210 Stoneridge Mall Rd., 5th Floor
Pleasanton, CA 94588

Project No. PHC-198J

November 2004

IMFC INGRAM MASON & FAIRBAIRN
A DIVISION OF IMFC CORPORATION

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Berkeley

IMFC INGRAM MASON
A DIVISION OF IMFC CORPORATION

FIFTY CALIFORNIA STREET · SUITE 1500 · SAN FRANCISCO, CALIFORNIA 94111
TEL 415-951-4793 · FAX 800-804-IMFC

Pulte Home Corporation
6210 Stoneridge Mall Rd., 5th Floor
Pleasanton, CA 94588

November 23, 2004

Attention: **Mr. Todd Levitt**

Subject: Environmental Investigation Report
Williamson Property, Antioch, California
Project No. PHC-198J

Dear Mr. Levitt:

Ingram Mason, a Division of IMFC Corporation (IMFC), has completed an environmental investigation of a site located at the southwest end of Hillcrest Avenue in the City of Antioch, Contra Costa County, California. The investigation consisted of a Phase I Environmental Site Assessment and a very limited program of soil sampling and analysis for investigation of pesticides.

The results of the site history review and the regulatory review show that no major pollutants have significantly impacted the site. Further, no major sources of contamination were identified on the vicinity properties that may migrate onto the site.

Based on the results of chemical analyses of soil samples collected at the site, IMFC anticipates that the residential development of the Property will not be impacted by environmental issues, and therefore, no mitigation measures appear to be necessary at this time.

In the professional opinion of IMFC, an appropriate level of inquiry has been made into the previous uses of the Site consistent with good commercial and customary practice in an effort to minimize liability, and except as noted, no apparent evidence or indication of *Recognized Environmental Conditions* (REC) have been revealed.

If you have any questions about the information in this report, or if we can be of further assistance, please contact us.

Very truly yours,

F. A. Serafin

Fred A. Serafin, REA # 1088
Senior Vice President



Enclosure
J:\fs\phc-198j.doc

ENVIRONMENTAL INVESTIGATION REPORT

WILLIAMSON PROPERTY

ANTIOCH, CONTRA COSTA COUNTY, CALIFORNIA

Prepared for

PULTE HOME CORPORATION

6210 Stoneridge Mall Rd., 5th Floor
Pleasanton, CA 94588

Project No. PHC-198J

November 2004

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ENVIRONMENTAL INVESTIGATION REPORT

Williamson Property
Antioch, California

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ENVIRONMENTAL INVESTIGATION REPORT

Williamson Property
Antioch, California

INTRODUCTION

Pulte Home Corporation (Pulte) is considering acquiring a parcel of land, located at the southwest end of Hillcrest Avenue in the City of Antioch, California, referred to as the (Site or Property) in this report. Pulte plans to develop the Site as a residential subdivision. Currently, the Site is vacant and is used for grazing cattle. Ingram Mason (IMFC) was retained by Pulte to conduct an environmental investigation consisting of a Phase I Environmental Site Assessment (ESA), and a very limited shallow soil sampling and chemical testing for the presence of pesticides prior to the acquisition of the Property. This report presents the results of that investigation.

The work was conducted during the period October 28, 2004 and November 29, 2004. This study was undertaken to identify areas of potential environmental concern or evidence of chemical contamination within the limits of the Property and/or as visually observed immediately adjacent to the Site on the day of the field reconnaissance.

Section I of the report presents the results of the Phase I ESA. The report of the very limited program of shallow soil sampling and chemical testing for presence of pesticides is presented in Section II. IMFC's conclusions and recommendations are presented in Section III. A Site Location Map is shown on Figure 1. A historical aerial photograph of the Site is presented on Figure 2. Figure 3 shows the approximate locations of soil samples.

ENVIRONMENTAL INVESTIGATION REPORT

Williamson Property
Antioch, California

SECTION I

PHASE I ENVIRONMENTAL SITE ASSESSMENT (ESA)

I-A. GENERAL

I-A-1. Overview

This report presents the results of a Phase I Environmental Site Assessment (ESA) for a parcel of land, located at the southwest end of Hillcrest Avenue in the City of Antioch, California. A Site Location Map is shown on Figure 1. The property is a ±200-acre parcel of vacant land which is currently used for grazing cattle. The Property is recorded at the Contra Costa County Assessor's Office as Assessor's Parcel Numbers (APN) 057-050-013 and 057-030-001.

I-A-2. Objective

The objective of this investigation was to assess the likelihood of the presence of potentially hazardous materials on-site and in the immediate site vicinity from past and/or present uses of the Site.

I-A-3. Approach

The approach used to meet the objective was to conduct a site walk-through and a site vicinity reconnaissance, a review of readily available information, discussions with tenants and/or owners' representatives and with personnel at regulatory agencies, and evaluation of the data obtained.

I-A-4. Scope of Services

To standardize environmental site assessments for commercial real estate, ASTM developed standard practice E 1527 for environmental site assessments. The standard was last revised in the year 2000, and is designated as E 1527-00. IMFC's services are generally based on the guidelines and definitions of the ASTM Practice E 1527-00 (*shown in Italic*), and conform to the specific requirements of Pulte's Environmental Review Policy, revised May 1999.

The goal for this ESA was to identify *recognized environmental conditions*; i.e., the presence or likely presence of any hazardous substances or petroleum products under conditions that indicate a past, existing, or material threat of a release onto the property, or into the ground, groundwater or surface water of the property. Materials used for this ESA rely on information that is *practically reviewable*; i.e., information from a source in a manner that, when examined, supplies relevant information without extraordinary analysis of irrelevant data. Further, this ESA relies on information that is *reasonably ascertainable*; i.e., publicly available, obtainable within reasonable time and cost constraints, and *practically reviewable*.

The authorized scope of services for this ESA was as follows:

- A reconnaissance to assess present Site conditions and to look for evidence of present or past operations that use or may have used potentially hazardous materials, including activities commonly associated with the storage of potentially hazardous materials. Site conditions will be photographically documented, where applicable;
- A site vicinity reconnaissance to compile the type of businesses in the immediate site vicinity that may use hazardous substances that in our judgment may impact the Site;
- Observation and recording of the presence of transmission lines and transformers;
- A review of selected readily available government agencies' records related to the presence of potentially hazardous materials on-Site and the site vicinity;
- A review of information to assess historical land use and property development including but not limited to readily available topographic maps, business directories, and local building and planning department records;

- A review of information regarding the surface and subsurface conditions including the hydrogeology, regional groundwater impairments, soil type, and topography of the site and site vicinity using selected references;

- Data evaluation and report preparation.

I-A-5. Site Data

Throughout this ESA, the following terms are used accordingly:

- "Site" or "Property" refers to a parcel of land; located at the southwest end of Hillcrest Avenue in the City of Antioch, Contra Costa County, California;

- "Immediate site vicinity" refers to other parcels immediately adjacent to the Site;

- "Site vicinity" refers to the area within approximately ½-mile radius of the Site; and,

- the term "hazardous" is used here in general accordance with its usage in Title 22, Division 4.5, Chapter 10, California Code of Regulations (CCR). The terms "hazardous materials" and "hazardous waste" are used interchangeably, and no legal distinction is implied between the two terms as used herein.

I-A-6. Site Reconnaissance

On November 1, and November 8, 2004 IMFC performed a site reconnaissance which included a walk-through and photographing of the Site, as well as observing surrounding areas. On the basis of the site reconnaissance and review of available documents, IMFC prepared the Site description. General Site conditions are shown on photographs numbers 1 to 10.

I-A-7. Topography

The general topography of the Site and the surrounding areas consist of relatively flat land. The property is currently vacant and used for grazing cattle. Currently the ground surface is mostly covered with low weeds and grass. A number of stockpiled random soils appear to have been dumped on the northeast corner of the Site. Sand Creek meanders through the south and southeast corner of the Property. Also, a man-made canal is located on the eastern border of the Site. The approximate average surface

elevation of the Site is 181 feet above Mean Sea Level (MSL). The Site slopes very gently toward east/southeast.

I-A-8. Site Geology and Hydrogeology

The Site is located on the western extent of the San Joaquin Valley at the base of a low range of foothills bordering the northeastern most portion of the Diablo Range, in central coastal California. The hills consist of folded and faulted marine sedimentary rocks of Cretaceous age. The Site is underlain by Sand Creek's recent young alluvial deposits of Holocene age and older alluvial deposits of Pleistocene age. Both of these units consists of predominantly unconsolidated, moderately-sorted, interbedded clays, silts, sands, and gravels derived from the hills south of the Site and deposited by the Creek. These flood plain alluviums were deposited during historical flooding events in the geologically recent times (5000 to 7000 years ago).

No site-specific data on the depth to the shallow groundwater aquifer underneath the Site or its flow direction were available to IMFC for review. However, review of regional groundwater regime within the vicinity of the Site indicates the groundwater depth at approximately 14 to 16 feet below ground surface. This depth corresponds favorably with the water levels at Sand Creek and the man-made canal that are located at the southern/southeastern and eastern boundaries of the Site, respectively.

I-A-9. Site Description

The following description was prepared on the basis of a site reconnaissance, review of available information, and interviews.

The Site is a semi-rectangular-shaped property, with an extended area at the southeastern portion of the Property. The Property is located on the southwest end of Hillcrest Avenue, and immediately south of Williamson Ranch residential development. The Site is currently used for grazing cattle, but reportedly it had previously been used for dry farming. According to Mr. Donald Williamson, the owner of the Property, cultivation of

grain and production of hay at the Site was terminated about thirty years ago. Currently, the Site is vacant and covered with low weeds and grass. A section in the northeast corner of the Site appears to be covered with imported soil and construction spoils from off-site sources. Sand Creek meanders at the south/southeast portion of the Site in a northeasterly direction. The Property is entirely enclosed by barbed wire on all sides. Active agricultural parcels are located both on the east and on the west sides of the Site; also, a large residential subdivision with a small park is located to the north of the Property. Gently rolling hills and Contra Costa County Flood Control facilities and lands are locates to the south of the Site.

A high voltage transmission line crosses the Property in a northwest/southeast direction. At least four towers of the transmission line are located on the Property. A 10.75-inch outside diameter active natural gas pipeline is located on the western boundary of the Site. The pipeline is operated by CPN Pipeline Company (CPN). In a communication from Mr. David Kramer, land specialist of CPN, the following information was disclosed about the pipeline:

- The Pipeline was constructed in 1963.
- The size of the pipeline is 10.75" O.D.
- The depth of burial is 5' below ground surface.
- On 10/31/1994 there was a breach in the line caused by a contractor's backhoe. There were no injuries, no fire and no casualties.
- The line was last pressure-tested in 2001
- The right of way was granted by Aubrey E. Williamson et al and was granted to Shell Oil Company. The right of way was recorded 4/4/1963 in Book 4337, Page 208 of the official records of Contra Costa County.

According to the Title Report, two lease agreements were executed in 1960 and 1969 for exploration of oil and gas within the Property. Review of regulatory agencies' records indicates several more wells were advanced for oil and gas exploration at the Site. Nonetheless, according to the records, all those wells have been plugged and abandoned.

Photographs of two plugged and abandoned wells with their standpipes are shown on Photographs numbers 9 and 10.

Generally, no indications of any major environmental impairment were observed on the Property during the site reconnaissance.

I-A-10. Adjacent Land Use

IMFC performed a limited visual observation of the surrounding sites in an attempt to identify areas of potential risk to the Site resulting from adjacent site activities. Observation of surrounding sites was limited to accessible areas and areas that could be readily observed from the Site.

Currently, with the exception of the residential development on the northern side, the immediate site vicinity appears to be agricultural; however, the review of aerial photos of the region shows that the entire site vicinity was previously used for agricultural purposes. Currently, Kaiser Permanente is constructing a large medical facility on the western vicinity of the Property. There are no indications of any previous industrial or major commercial activities within the site vicinity.

Review of available databases for oil/gas well locations shows that a number of oil and gas wells were advanced within the site vicinity between 1963 and 1983. However, reportedly most of them were dry, and further, the records indicate that all of them have been plugged and abandoned.

I-A-11. Storage Tanks

IMFC did not observe evidence of potential underground or aboveground storage tanks for hydrocarbon fuels (i.e. pipes, vents, pumps, and concrete foundation) at the Site.

I-A-12. Indications of Polychlorinated Biphenyls (PCBs)

During the Site walk-through, the Site was inspected for the presence of liquid-cooled electrical units (transformers and capacitors). Such units may be potential

polychlorinated biphenyl (PCB) sources. No off-site pole-mounted transformers were observed during the site reconnaissance.

I-A-13. Indications of Solid Waste Disposal

Evidence of limited dumped solid wastes was observed at the northeast corner of the Property during the site visit. No source of the imported material was available.

I-B. SITE HISTORY REVIEW

IMFC performed a site history review to identify the former uses of the Site. The site history survey included review of aerial photographs and available regional reports, and interviews with knowledgeable people.

I-B-1. Aerial Photographs

Forty-five years of aerial photos covering the Site area were available at Pacific Aerial Surveys in Oakland, California. These photographs spanned the years 1957-2002, and were reviewed in stereo, when available, to analyze three-dimensional features. The identification, scale, and date of the aerial photographs reviewed are tabulated below:

Photo ID	Scale	Date
AV 8202-132, 7, 8 & 9	**1:12000**	**11.05.02**
AV 6597-41, 8 & 9	**1:14400**	**05.19.00**
AV 6100-133, 7, 8 & 9	**1:12000**	**08.17.98**
AV 5200-33, 8 & 9	**1:12000**	**07.31.96**
AV 4625-133, 8, 9 & 10	**1:12000**	**06.02.94**
AV 3845-31, 8, 9 & 10	**1:12000**	**07.23.90**
AV 3368-30, 7, 8 & 9	**1:12000**	**08.30.88**
AV 2630-03, 7, 8 & 9	**1:48000**	**04.30.85**
AV 2050-14, 18, 19 & 20	**1:54000**	**10.18.81**
AV 1700-14, 16 & 17	**1:54000**	**05.14.79**
AV 1215-14, 17, 18 & 19	**1:54000**	**02.10.76**
AV 965-14, 17 & 18	**1:48000**	**08.31.70**
AV 844-22, 35, 36 & 37	**1:30000**	**05.07.68**
AV 550-17, 35, 36 & 37	**1:36000**	**07.23.63**
AV 253-32, 7, 8 & 9	**1:12000**	**05.15.57**

The following discussion provides a chronology of apparent usage of the Site and site vicinity, developed from the interpretation of the aerial photographs. The general areas of the Site and the site vicinity appear as vacant or agricultural lands since at least 1957. The Site appears to have not changed since 1957. The construction of the north side residential development appears to have started in the early 1990s. Contra Costa County Flood Control activities on the southern side of the Site appears to have started in 1996. The new residential development at the northeast side of the Property appears under construction in 2002.

No outstanding features appear on the aerial photos to indicate any major environmental impairment of the Site. Figure 2 shows the aerial photograph of the Site taken in 2002.

I-B-2. Sanborn Company Fire Insurance Maps

Sanborn maps are detailed fire insurance maps that were first published in 1867 by the Sanborn Company of New York for cities throughout the United States; and were regularly updated until about 1950. These maps document the various businesses and uses in a given area so that risk may be determined for a particular site which needs insurance. They are useful for determining potential environmental risk for a given site, which may result from historical activities on the site or adjacent properties. The Site was not represented on the Sanborn maps.

I-C. RECORD REVIEW

I-C-1. Regulatory Agency Review

In order to survey potential on- and off-site pollutant sources, IMFC utilized the services of Environmental Data Resources Inc. (EDR) to examine several regulatory listings for sites with reported soil and groundwater contamination. The Site was not listed on any of the databases reviewed for this assessment. Within a five-mile radius of the Site, no NPL and one CERCLIS facility was identified by IMFC. Within a one-half mile radius

of the Site no facility on the LUST list was identified. The record search data is presented in Appendix A. Various lists which IMFC reviewed are listed on the table below.

Regulatory Database Reference

Governmental Records	*Radius Searched*	*No. Found*
US EPA National Priority List (NPL)	5 miles	0
US EPA Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS)	5 miles	1
US EPA Resource Conservation and Recovery Act (RCRA) Corrective Actions and Associated TSD (CORRACTS)	1 mile	0
US EPA RCRA Registered Large- and Small- Quantity Generators (RCRIS-LQG) and (RCRIS-SQG)	¼ mile	0
US EPA Emergency Response Notification System (ERNS)	¼ mile	0
Cal EPA/ Office of Emergency Information (Cortese)	1 mile	0
California Regional Water Quality Control Board (RWQCB), Leaking Underground Storage Tank (LUST)	½ mile	0
SWF/LF (SWIS) Solid Waste Information System, Landfills, Incinerators, or Transfer Stations	½ Mile	0
California State Water Resources Control Board (SWRCB), Registered Underground or Aboveground Storage Tanks (UST/AST)	¼ mile	0
California Department of Toxic Substances Control, Cal-sites Database (Cal-Sites).	1 mile	0

In general, only potentially hazardous materials released from facilities located approximately up-gradient and within one-quarter of a mile from the Site, or immediately adjacent to the Site, are judged to have a reasonable potential of migrating onto the Property. This judgment is based on the assumption that materials generally do not migrate very large distances laterally within the soil, but rather tend to migrate with groundwater in the general direction of groundwater flow. General groundwater flow direction in the vicinity of the Site is not readily available; however, no facility is listed on the databases that may have any potential adverse impact on the Site.

I-C-1-1. National Priority List (NPL)

List dated July 2004. Information contained in the National Priority List, a list of sites prioritized by the EPA for cleanup under CERCLA (Comprehensive Environmental Response, Compensation and Liability Act), indicates that the Site is not listed as an active or proposed NPL site. No NPL site is reported within a 5-mile radius of the Site.

I-C-1-2. US EPA, Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS)

CERCLIS is a database maintained by the EPA of potentially hazardous waste sites that have come to the attention of the EPA. Sites on the CERCLIS list are not necessarily hazardous waste sites but are sites that the EPA plans to investigate in the future, or has already investigated. List dated August 2004. Information contained in the CERCLIS list indicates that currently the Site is not a CERCLIS site, and one facility within a five-mile radius of the Site is listed on the database.

> **Fulton Shipyard, 307 Fulton Shipyard Road, Antioch, CA 94509.** This facility is located approximately 2 miles north/northwest of the Site. Fulton Shipyard operated as a ten-acre shipyard between 1918 and 1999. The Shipyard was used for maintenance of tugboats, pleasure crafts, and manufacturing of crane equipment. Wastes from the past on-site operations included oil, bilge water, and blast media containing lead, zinc and tin. In 1984, the Department of Health Services oversaw the removal of a 500-gallon underground storage tank. Soil sampling at the site detected high concentrations of lead, zinc, copper and mercury. Due to the distance and the nature of contamination, this facility will not have any adverse environmental impact on the Site.

I-C-1-3. U.S. EPA, RCRA Corrective Actions and Associated Treatment, Storage, and Disposal (TSD) facilities (CORRACTS)

The RCRA TSD list is a data base maintained by the U.S. EPA for facilities at which treatment, storage and/or disposal of hazardous waste takes place, as defined and regulated by RCRA. List dated June 2004. Information contained in the TSD list

indicates the Property is not reported on the list. No sites within 1-mile radius of the Site were listed as RCRA TSD facilities.

I-C-1-4. US EPA RCRA Registered Generators (RCRIS-LQG) & (RCRIS-SQG)

The RCRA Generators list is a nationwide database created to maintain and regulate facilities that handle hazardous wastes. This database replaced the Hazardous Waste Data Management System in September 1992 as the major system supporting the implementation of the RCRA. List is dated August 2004. Information contained in the list indicates that the Site is currently not listed as a small or large quantity generator. No facilities are identified on the list within ¼-mile of the Site.

I-C-1-5. U.S. EPA, Emergency Response Notification System (ERNS) list

The ERNS list is a national computer database and retrieval system used to store information on accidental releases of oil and hazardous substances. The information stored on this database is acquired through the National Response Center. The Center tracks over 35,000 incidents per year. List dated December 2003. The Site is currently not listed as being on the ERNS database.

I-C-1-6. Cal EPA/ Office of Emergency Information (Cortese)

The Cortese list is a database provided by the Cal EPA/ Office of Emergency Information. The sites listed on the database are taken from other lists. The list is dated April 2001, and no update is planned. The database lists no facilities.

I-C-1-7. Leaking Underground Storage Tanks (LUST).

The California State Water Resources Control Board compiles list of all reported leaking underground storage tanks incidents in the region. The list is dated July 2004. The Site did not appear on the list; and no sites within a one half-mile radius of the Site were listed.

I-C-1-8. Solid Waste Landfills, Incinerators, or Transfer Stations SWF/LF (SWIS).

The SWIS list is a database maintained by the California Integrated Waste Management Board (CIWMB) of active, closed and inactive landfills. The SWIS is a list of solid waste disposal facilities that include facilities that fail to meet RCRA regulations. List dated September 2004. Information contained in the CIWMB list indicates that there are no active or inactive landfills, proposed landfills, transfer stations, composting facilities or material recovery facilities reported to exist within 1/2-mile radius of the Site.

I-C-1-9. Underground and Aboveground Storage Tanks (USTs and ASTs).

These databases are maintained by the State Water Resources Control Board of registered underground and aboveground storage tanks. The lists dated June 2004, and December 2003, respectively. The Site did not appear on either lists, and no sites were identified on the lists within a 1/4 mile radius of the Site.

I-C-1-10. Cal-sites Database (Cal-Sites).

The Cal-sites Database is provided by the California Department of Toxic Substances Control (TTSC). The list contains sites considered to be actually or potentially contaminated and presenting a possible threat to human health and the environment. These sites are generally listed by the state to warn the public or as a part of an investigation and cleanup program managed by the state. List dated October 2004. The Site did not appear on the CAL-Sites databases, and no site was identified within a 1-mile radius of the Site.

There are some environmental sites that cannot be geocoded, but can be located by zip code or the city name. These sites are referred to as orphan sites. A cursory review of these sites and the databases indicates that these facilities are not considered as environmental concerns to the Site.

I-C-2. City and County Records

No records of environmental violations for the Site were found at the Contra Costa County Department of Environmental Health, or Contra Costa County Health Services, Hazardous Materials Program.

I-D. DISCUSSION

This Phase I Environmental Site Assessment included reconnaissance visits to the Site, review of the listed available environmental databases and related agency information for the Site and surrounding sites, review of prior usage records and investigative reports, aerial photographs, published geologic information, interviews with owners' representatives, and other related items. Specifically, this assessment was undertaken to identify areas of potential environmental concern or evidence of chemical contamination within the limits of the Site and/or as visually observed immediately adjacent to the Site that could potentially impact the development of the parcels for residential development.

Currently, the Site is a vacant land that is used for grazing cattle. Historically, most of the Site and the site vicinity have been used as agricultural land and/or pastures since at least 1957. During the farming and operation of the Site, agrochemicals were probably used. The use of pesticides, including arsenic and lead, in the agricultural environment of the region was quite prevalent in the 1940s. The possibility always exists that some persistent chemicals that have not degraded over the years may still be present in the soil. Low levels of pesticides contamination are not uncommon in the agricultural environment of the region. The extent of their presence, if any, would depend on the actual chemicals used and the length of time since they were applied.

Reportedly, the Property was historically used for cultivation of grain and production of hay. Therefore, concern over the use of pesticides appears to be marginal. However, to confirm that this concern is not significant, as well as no contaminants

have been migrated on-site from off-site sources, concurrent with the performance of this assessment, a very limited program of soil sampling and chemical testing was implemented by IMFC. The details of the program along with the results are presented in the following section.

ENVIRONMENTAL INVESTIGATION REPORT

Williamson Property
Antioch, California

SECTION II

LIMITED PROGRAM OF SOIL SAMPLING AND ANALYSIS FOR INVESTIGATION OF PESTICIDES

II-A. GENERAL

Reportedly, the Site has previously been used for cultivation of grain and production of hay since at least 1957; however, in recent years the Site has been left vacant and used only for grazing cattle. The Property is also surrounded by agricultural lands. The historical activities at the Site do not necessarily tend themselves as contributor to the environmental degradation of the Property. However, there is a slim possibility that some agricultural chemicals were either applied at the Site or were migrated onto the Site from off-site sources. Although the existence of low levels of persistent pesticides and/or their metabolites are not uncommon in these environments, the historical land use of the Site and the immediate site vicinity warranted a cursory examination to confirm that pesticide residues do not exist at unacceptable concentrations. Accordingly, a very limited program of soil sampling and analyses was proposed as a preliminary step to characterize the Site, to establish the preliminary baseline conditions, and to evaluate the need for any further investigation and/or potential remediation.

II-B. ANALYTICAL METHODOLOGY

II-B-1. Pollutants of Concern and Chemical Analyses

Based upon historical land use and available information for the Site, and upon discussion with Pulte, IMFC recommended that soil sampling and analysis for elevated concentrations of chlorinated pesticides and the metals arsenic, lead and mercury be conducted at the Site. Accordingly, the chemical analyses of samples collected at the Site consisted of Environmental Protection Agency (EPA) Test Method 8081 for organochlorine pesticides, and EPA 6000/7000 Series Methods for arsenic, lead, and mercury, respectively.

II-B-2. Analytical Laboratory

For this project, IMFC utilized the services of Sequoia Analytical Laboratory, Sacramento, California. Sequoia Analytical is certified in California by the Department of Health Services under the Environmental Laboratory Accreditation Program (ELAP), and its certification number is 1624.

II-C. SAMPLING OPERATION

II-C-1. Sampling Methodology

Once the probable pollutants were identified, development of an acceptable sampling program was completed. Normally, the sampling methodology is based on guidance from the *Test Methods for Evaluating Solid Waste, SW-846, Chapter 9, Office of Solid Waste and Emergency Response, U.S. Environmental Protection Agency,* and *IMFC's Drilling, Sealing, and Sampling Protocol.* However, in this instance, due to the limited scope of the investigation, only the IMFC protocol was followed.

II-C-2. Selection of Sample Locations

The normal magnitude and frequency of pesticides applications in the agricultural environment of the region and persistent and immobile nature of the compounds make

it unlikely that any one location would be a hot spot and contain high concentrations; unless the location has been used as a staging area for handling of, or loading the sprayers. In an effort to evaluate whether pollutant hot spots exist at the Site, IMFC staff reviewed aerial photographs of the Site for the years 1957–2002. IMFC staff did not observe any evidence of probable hot spot areas from the site reconnaissance or from the aerial photo review. Therefore, the selection of sample locations was based on the goal of obtaining average representative pollutant concentrations for the Site.

The sampling locations were chosen on a random basis in an effort to obtain average representative concentrations throughout the Site. A total of six samples were collected from the shallow depth (6-12 inches) from various areas of the Site. Figure 3 shows approximate locations of samples collected for chemical analyses.

Organochlorine pesticides are relatively immobile and highly sorptive onto soil particles. In addition, they are not very soluble or volatile. Therefore, they are often found at shallower depths in the soil. Frequently, they reside in the plowed layer or just below it, and do not migrate very far down the soil column. For these reasons, the sampling plan was intended to test the soil at shallower depths for possible pesticides impact at the Site.

II-C-3. Field Investigation

The field operation was performed on November 8, 2004. The approximate location of each sampling point was marked in the field in accordance with the previously prepared plan. A sample was obtained from a depth of about 6-12 inches below the surface at each shallow sampling location. Samples were obtained from the appropriate depths by use of a hand held slide hammer sampler. Each collected soil sample was then placed in a laboratory-cleaned glass jar, and properly labeled. Subsequently, all soil samples were transported under chain-of-custody to Sequoia Analytical Laboratory.

II-D. CHEMICAL RESULTS

Altogether, six (6) shallow samples were collected and tested for pesticides, and four (4) samples were tested for metals.

It should be noted that non-detection of a compound in any of these samples does not necessarily indicate the absence of that compound in the sample. It merely shows that the concentration of that compound in the sample does not exceed the lab detection limits.

None of the samples contained detectable concentrations of any pesticides tested for. Samples tested for metals contained non-detectable concentrations of lead and arsenic. Three of the samples detected low concentration of mercury. No other contaminants tested for were detected above the laboratory detection limits. Copies of laboratory data sheets along with quality control data are included in Appendix B.

II-E. QUALITY ASSURANCE/QUALITY CONTROL

Quality Assurance/Quality Control Review (QA/QC) procedures for the collection and chemical analysis of soil samples have been promulgated by the EPA in the document SW-846. These procedures are designed to confirm the reliability of the test results. The following section offers a review of the QA/QC procedures that were followed in the field and the QA/QC data supplied by the testing laboratory.

(1) **Field Sampling** - The soil samples were collected in accordance with IMFC's internal sampling protocol. To prevent contamination between discrete sampling points, the sampler was cold cleaned with non-hazardous inorganic detergent and rinsed with deionized water. The integrity of the sample was maintained by properly sealing, labeling, and storing the samples until receipt by the testing laboratory.

(2) **Laboratory Analysis** - To evaluate the validity of the test results, the following QA/QC parameters were reviewed:

- Sample holding times
- Matrix spike/matrix spike duplicate (MS/MSD) recovery data

The laboratory report indicates that for all the samples, the analytical procedures, including extraction and analysis, were performed within the sample holding times specified by the EPA for the various analyses.

Matrix spike/matrix spike duplicate (MS/MSD) data was supplied by Sequoia Analytical for all the chemical analyses requested. The SW-846 manual specifies that MS/MSD analyses be performed on a subset of the samples being analyzed. In the MS/MSD procedure, the selected sample is spiked with a compound that is identical to the compound being analyzed for. The selected sample is then split, to create a duplicate, and both parts are analyzed. The recovery percentages of both spikes should fall within limits specified either by SW-846 or the laboratory, as allowed by SW-846. The relative percent difference (RPD) of the recoveries of the spike and duplicate are calculated and are used to assess the precision of the analytical procedure. The MS/MSD data was reported as percentage recovery of spike and duplicate. The RPDs were calculated in each case and were compared with the RPD limits set by SW-846 or the limits set by the lab for spike recoveries from water and soil matrices. The RPD for each analysis was reviewed. All RPDs fell within the allowable limits, and are considered acceptable.

II-F. DATA ANALYSIS

Goals of sampling and analyses at the Site were to obtain and analyze a very limited number of samples in order to: 1) establish representative average concentration of potential pollutant at the Site; and 2) in case of encountering any concentrations of contaminants, assess the potential source of pollutants, estimate whether it was generated on-site or were migrated from off-site sources, and evaluate the need for implementation of an expanded sampling and chemical analysis program.

No concentration of arsenic, lead, and any pesticides tested for were detected at the Site. Concentrations of mercury detected in soil samples were significantly less than regulatory thresholds, and therefore, it is considered as background and naturally occurring.

II-G. CONCLUSIONS

This very limited programs of soil sampling and chemical testing included reconnaissance visit to the Site, review of the listed available environmental databases and related agency information for the Site and surrounding areas, interviews, and review of prior usage records, aerial photographs, published geologic information, and subsequent implementation of the sampling program. The information thus gathered was used to evaluate existing or potential environmental impairment of the Site due to current or past land use as outlined in this report.

The Site has predominantly been used for agricultural purposes and grazing cattle since at least 1957. A slim possibility existed that some agricultural chemicals may have been used at the Site or may have migrated onto the Site. Low levels of pesticide contamination are not uncommon in the agricultural environment of the region. The extent of their presence, if any, would depend on the actual chemicals used and the length of time since they were applied. The results of the limited soil sampling and chemical analyses did not detect existence of any chemicals tested for.

Accordingly, based on the results of laboratory analyses and non-detection of pesticide residues in the soil during the performance of this investigation, IMFC anticipates that no mitigation measure will be required prior to the development of the Property as a residential development.

ENVIRONMENTAL INVESTIGATION REPORT

Williamson Property
Antioch, California

SECTION III

CONCLUSIONS/ RECOMMENDATIONS

III-A. CONCLUSIONS

This Phase I Environmental Site Assessment and limited program of soil sampling and chemical testing included reconnaissance visits to the Site, review of environmental and geotechnical reports, review of the listed available environmental databases and related agency information for the Site and surrounding areas, interviews, and review of prior usage records, aerial photographs, published geologic information, preparation of a workplan for the performance of limited soil sampling and chemical testing, and subsequent implementation of the workplan. This information was used to evaluate existing or potential environmental impairment of the Site due to current or past land use as outlined in this report.

The Site has predominantly been used for agricultural purposes and grazing cattle since at least 1957. Review of aerial photographs indicates that the Site has undergone almost no changes since 1957.

IMFC did not identify any major pollutant that could have potentially impacted this Site to levels that may need active remediation. The results of the site history review and the regulatory review have also shown that no major pollutants have significantly impacted this Site to levels that may require any remediation. There appears to be no major sources of contamination evident on adjacent properties that may migrate on-site.

Since the Site had been used for agricultural purposes, the possibility existed that some agricultural chemicals may have been used at the Site, and that they have not degraded over the years. Low levels of pesticide contamination are not uncommon in the agricultural environment of the region. The extent of their presence, if any, would depend on the actual chemicals used and the length of time since they were applied. To confirm that no residues existed at the Site, six soil samples were collected from various locations of the Site and tested for the concentration of pesticides, arsenic, lead and mercury. The results of the limited soil sampling and chemical analyses did not detect existence of any pesticide, lead or arsenic concentrations. The concentrations of mercury detected in three samples were very low.

Based on the laboratory results, IMFC anticipates that the pollutants tested for would not impact the development of the Property as a residential development, and further, no mitigation measure appears to be necessary at this time.

In the professional opinion of IMFC, an appropriate level of inquiry has been made into the previous uses of the Site consistent with good commercial and customary practice in an effort to minimize liability; and except as noted, no apparent evidence or indication of *Recognized Environmental Conditions* (REC) have been revealed.

III-B. RECOMMENDATIONS

The investigation outlined in this report revealed that no major pollutants have significantly impacted the Site to levels that may require any remediation. Therefore, no adverse environmental impact on the development of the Site for residential purposes is anticipated.

⇨ It is recommended that a health and safety plan be drawn up for the construction phase of the project. This plan should also include a section addressing dust abatement.

- ⇨ It is recommended that extreme care be exercised during performance of work near the natural gas pipeline in order to avoid inadvertent breach of the line.

- ⇨ Records indicate that several oil and gas wells were drilled at the Site, but they were later plugged and abandoned. It is recommended that they all be located and dealt with prior to commencement of grading operation.

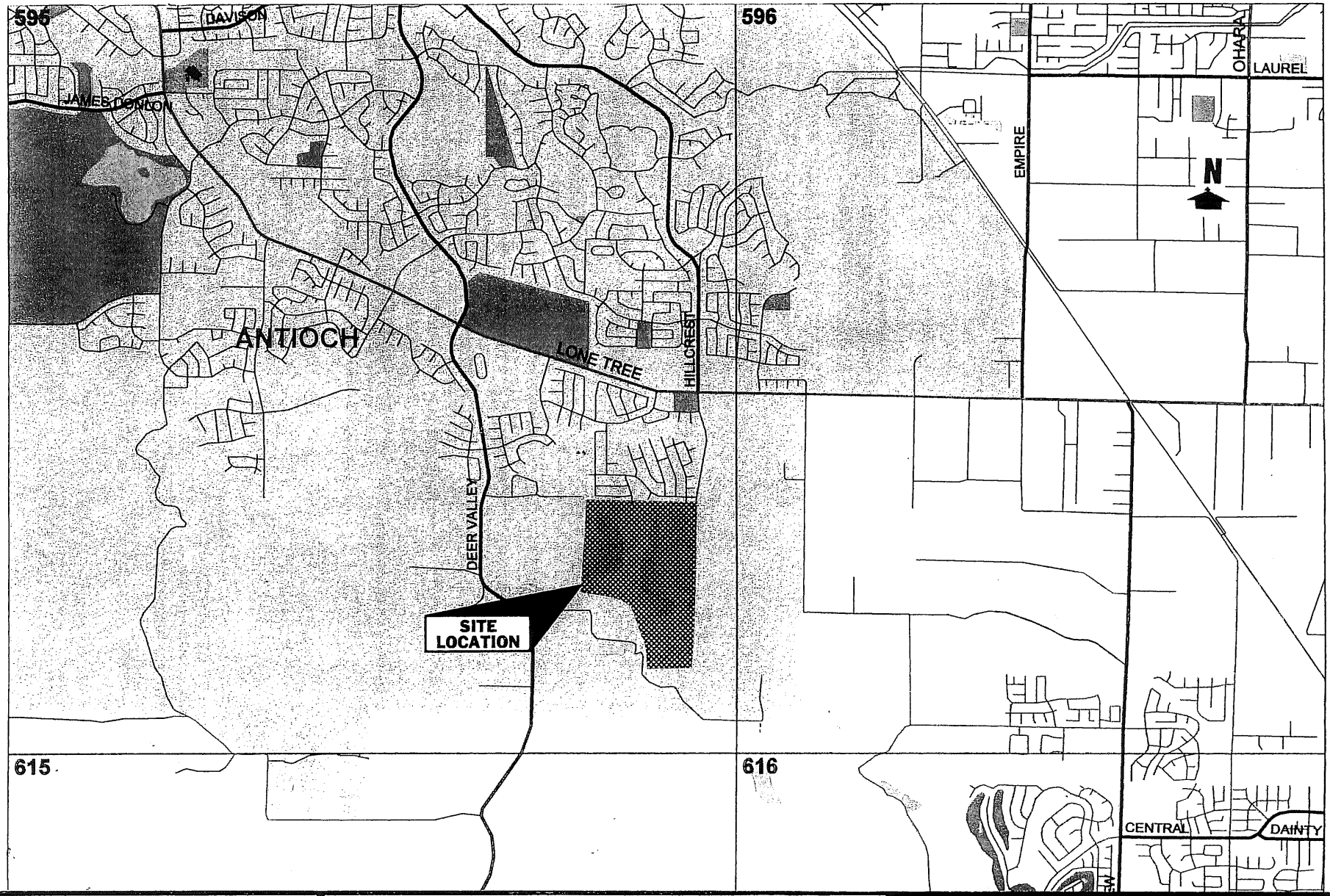
III-C. LIMITATIONS

The data, information, interpretations, and recommendations contained in this technical report are presented solely as preliminary bases and guides to the existing environmental conditions of the ±200-acre property (known as Williamson Ranch Property), located at the southwest end of Hillcrest Avenue in the City of Antioch, Contra Costa County, California. The conclusions and professional opinions presented herein were developed by IMFC in accordance with generally accepted engineering principles and practices. As with all geotechnical and environmental reports, the opinions expressed here are subject to revisions in light of new information, new governmental regulations or new interpretations of existing regulations, which may be developed in the future, and no warranties are expressed or implied.

Environmental evaluations are limited in the sense that conclusions and recommendations are developed from personal interviews and information obtained from limited research and secondary sources. Except as set forth in this report, IMFC has made no independent investigations as to the accuracy or completeness of the information derived from the secondary sources and personal interviews and has assumed that such information was accurate and complete.

The services provided represent professional opinions, formulated within specific budget limits, upon which Pulte Home Corporation can base actions to reduce the potential for exposure to liability for the consequence of the occurrence of hazardous waste.

This report has not been prepared for use by parties other than Pulte Home Corporation. It may not contain sufficient information for the purposes of other parties or other uses. If any changes are made in the project as described in this report, the conclusions and recommendations contained herein should not be considered valid, unless the changes are reviewed by IMFC, and the conclusions and recommendations are modified or approved in writing.



IMFC

PULTE HOME CORPORATION

Williamson Ranch Property
Antioch, California

SITE LOCATION MAP

PROJECT NO.	DATE	FIGURE NO.
PHC-198J	*November 2004*	*1*



IMFC

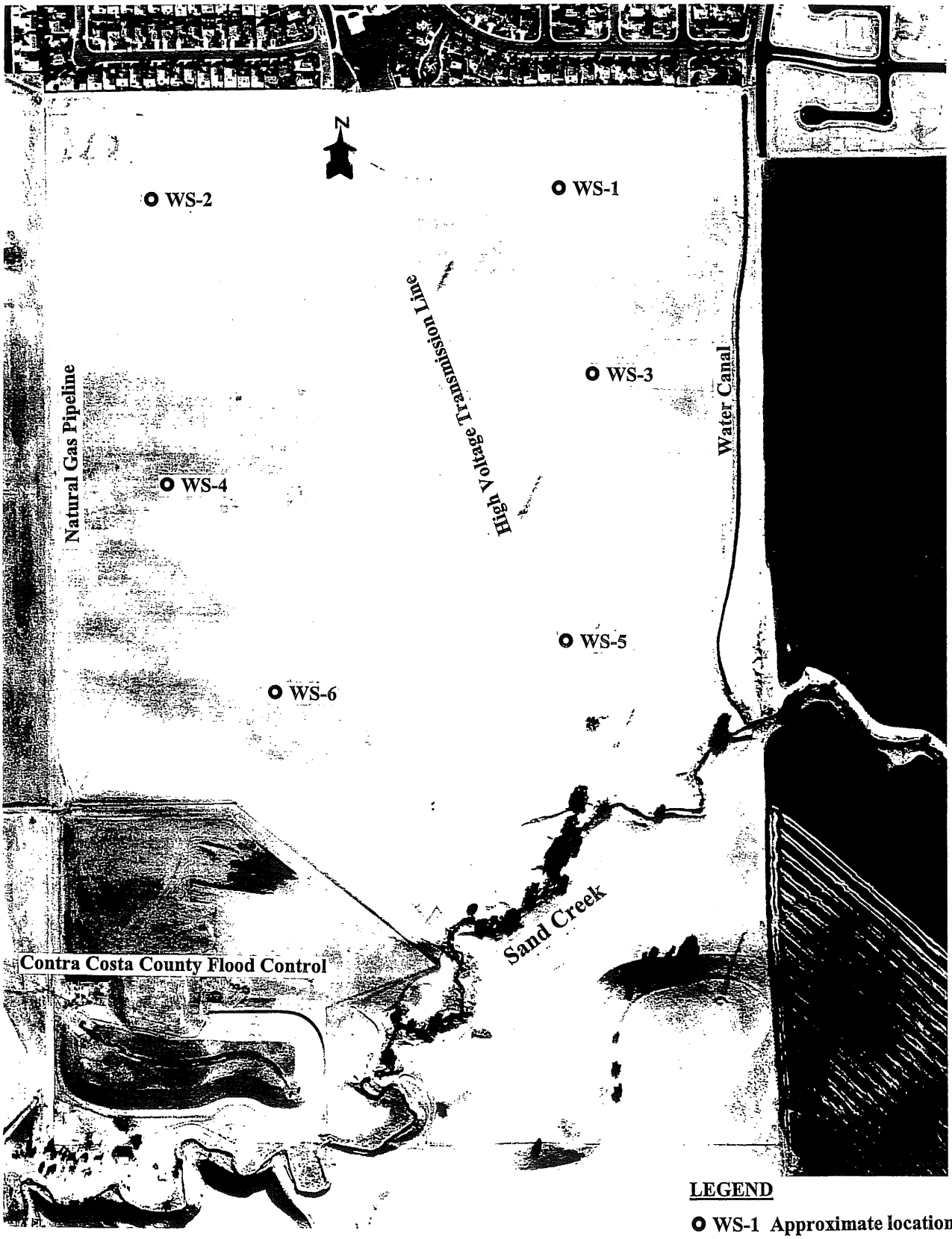
PULTE HOME CORPORATION

Williamson Ranch Property
Antioch, California

Date Flown: 11-5-2002 *Scale: 1"=430'*

SITE AERIAL PHOTOGRAPH

PROJECT NO.	DATE	FIGURE NO.
PHC-198J	*November 2004*	*2*



LEGEND

WS-1 Approximate locations of soil samples

IMFC

PULTE HOME CORPORATION

Williamson Ranch Property
Antioch, California

Date Flown: 11-5-2002 *Not to Scale*

SITE FEATURES
LOCATIONS OF SOIL SAMPLES

PROJECT NO.	DATE	FIGURE NO.
PHC-198J	*November 2004*	*3*



Photo No. 1- ***General Site Conditions, looking west.***



Photo No. 2- ***General Site Conditions, looking southwest.***



Photo No. 3- ***General Site Conditions.***

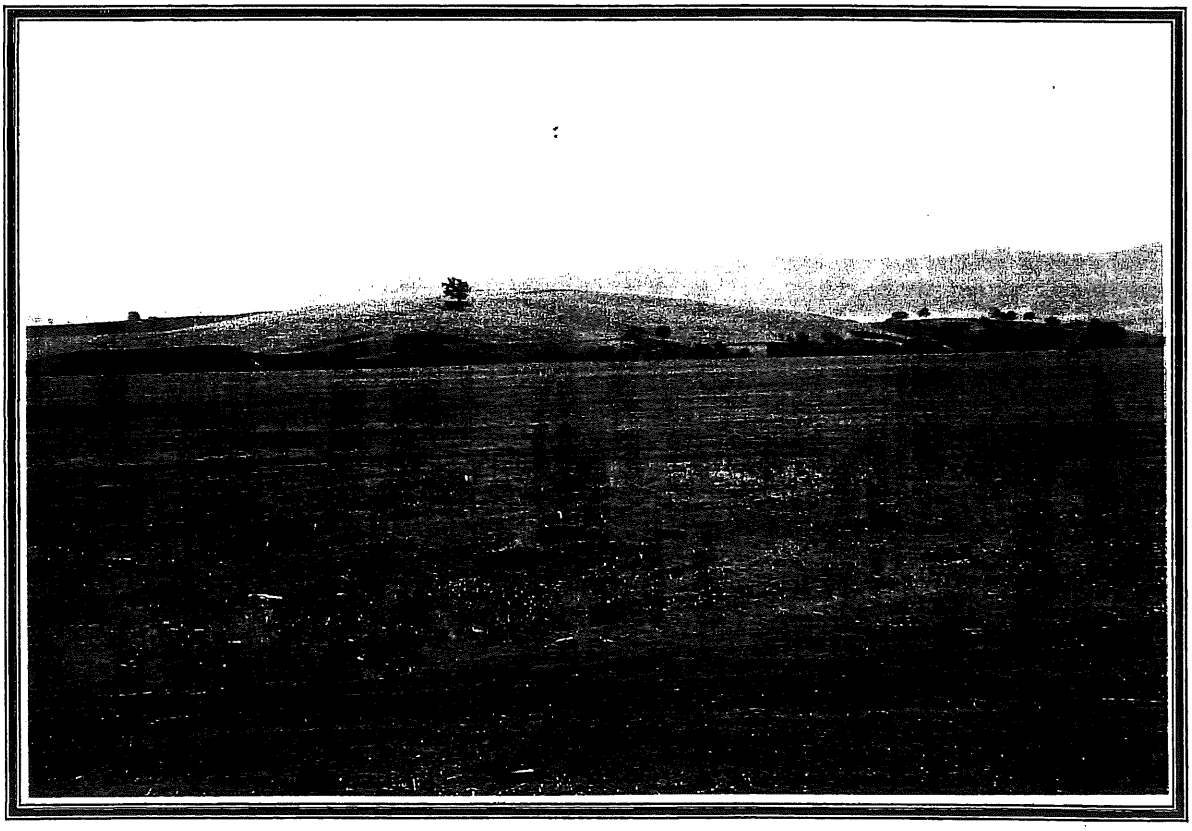


Photo No. 4- ***General Site Conditions.***



Photo No. 5- ***General Site Conditions, man-mad canal on the eastern boundary of the site.***

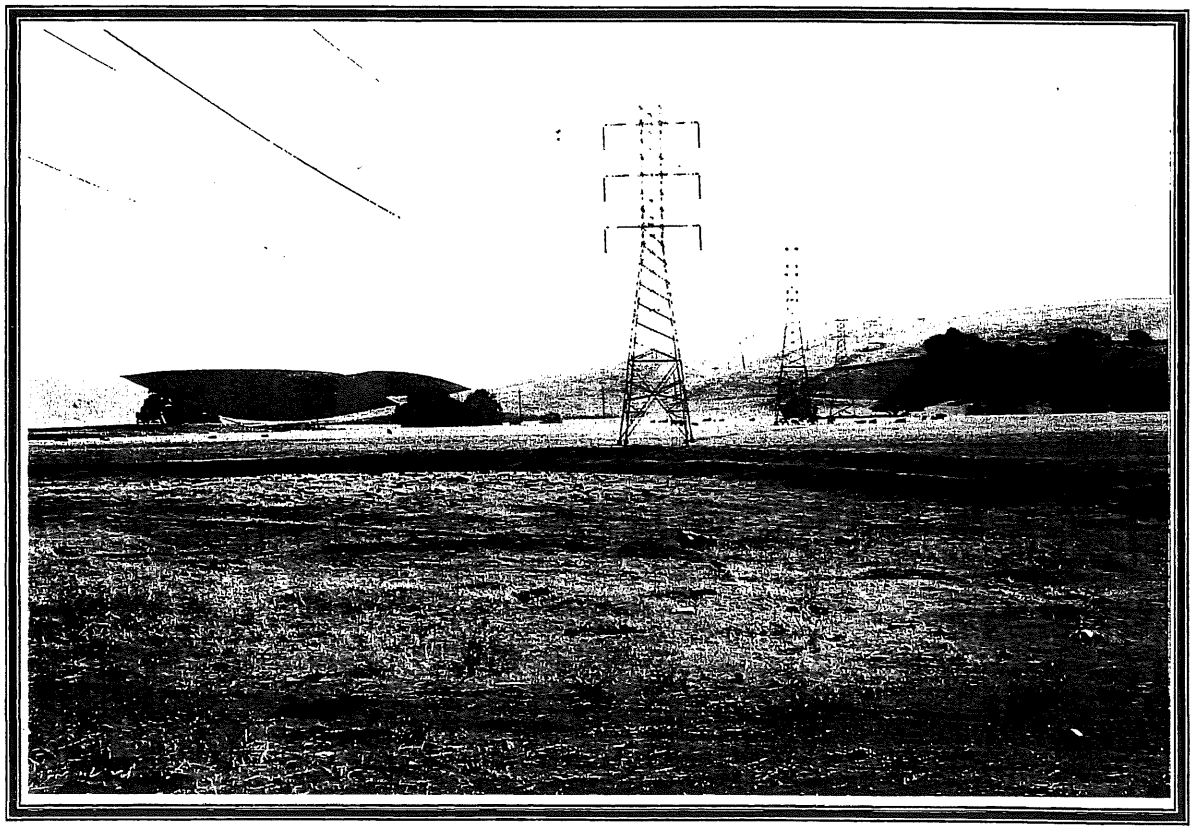


Photo No. 6- ***General Site Conditions, high voltage transmission line.***

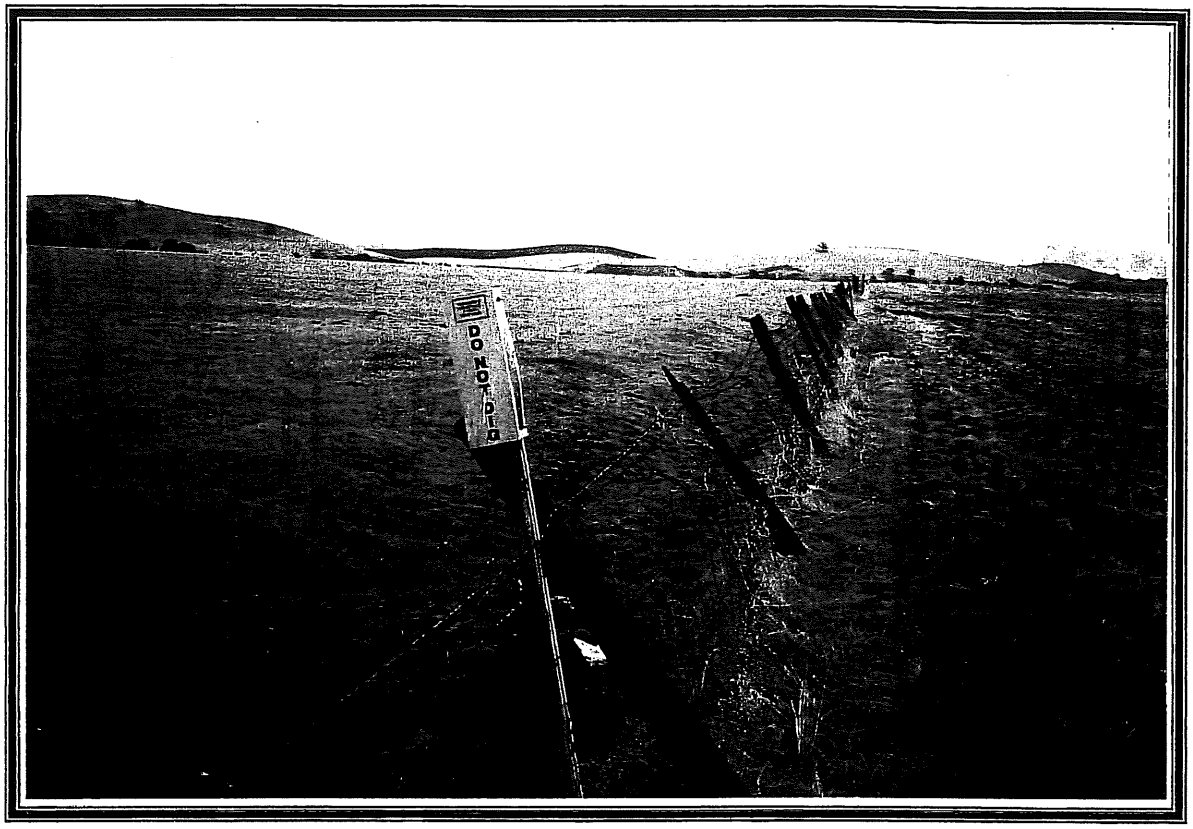


Photo No. 7- ***Natural gas pipeline on the western boundary of the site.***



Photo No. 8- ***Natural gas pipeline posted on the northwestern corner of the site.***



Photo No. 9- ***Standpipe of a plugged and abandoned oil and gas well at the northern portion.***

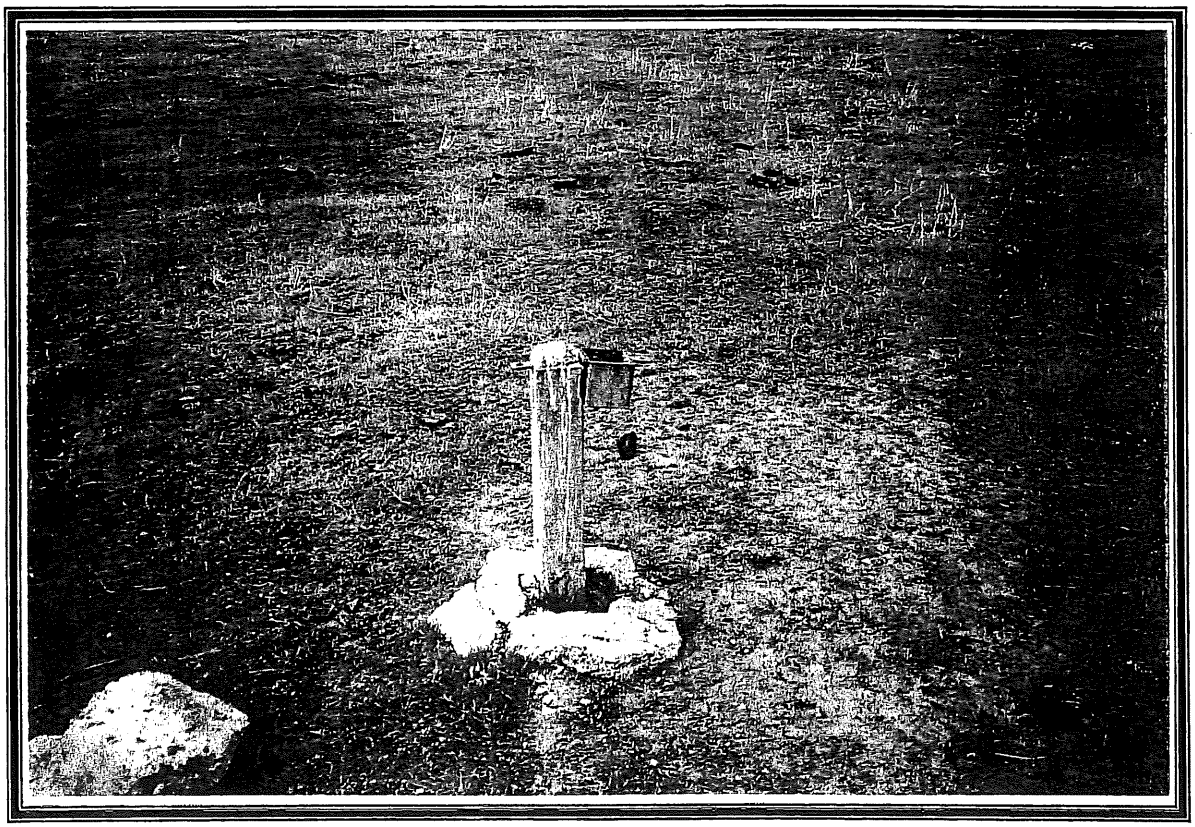


Photo No. 10- ***Standpipe of a plugged and abandoned oil and gas well.***

APPENDIX A

Regulatory Record Search Data

IMFC

The EDR Radius Atlas™ with GeoCheck®

Williamson Property
Prewett Ranch Rd/Hillcrest Ave
Antioch, CA 94531

Inquiry Number: 01301680.1r

November 05, 2004

EDR™ Environmental Data Resources Inc

The Standard in Environmental Risk Management Information

440 Wheelers Farms Road
Milford, Connecticut 06460

Nationwide Customer Service

Telephone: 1-800-352-0050
Fax: 1-800-231-6802
Internet: www.edrnet.com

FORM-SHA

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Map Findings	30
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Government Records Searched/Data Currency Tracking	GR-1

GEOCHECK ADDENDUM

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Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc. (EDR). The report meets the government records search requirements of ASTM Standard Practice for Environmental Site Assessments, E 1527-00. Search distances are per ASTM standard or custom distances requested by the user.

TARGET PROPERTY INFORMATION

ADDRESS

PREWETT RANCH RD/HILLCREST AVE
ANTIOCH, CA 94531

COORDINATES

Latitude (North):	37.951600 - 37° 57' 5.8"
Longitude (West):	121.762900 - 121° 45' 46.4"
Universal Tranverse Mercator:	Zone 10
UTM X (Meters):	608690.2
UTM Y (Meters):	4200961.0
Elevation:	182 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property:	37121-H7 ANTIOCH SOUTH, CA
Source:	USGS 7.5 min quad index

TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the ASTM E 1527-00 search radius around the target property for the following databases:

FEDERAL ASTM STANDARD

NPL ..... National Priority List
Proposed NPL ..... Proposed National Priority List Sites
CERC-NFRAP ..... CERCLIS No Further Remedial Action Planned
CORRACTS ..... Corrective Action Report
RCRIS-TSD ..... Resource Conservation and Recovery Information System
RCRIS-LQG ..... Resource Conservation and Recovery Information System
RCRIS-SQG ..... Resource Conservation and Recovery Information System
ERNS ..... Emergency Response Notification System

STATE ASTM STANDARD

AWP ..... Annual Workplan Sites

Cal-Sites	Calsites Database
CHMIRS	California Hazardous Material Incident Report System
Cortese	"Cortese" Hazardous Waste & Substances Sites List
Notify 65	Proposition 65 Records
Toxic Pits	Toxic Pits Cleanup Act Sites
SWF/LF	Solid Waste Information System
WMUDS/SWAT	Waste Management Unit Database
LUST	Leaking Underground Storage Tank Information System
CA BOND EXP. PLAN	Bond Expenditure Plan
UST	List of Underground Storage Tank Facilities
VCP	Voluntary Cleanup Program Properties
INDIAN LUST	Leaking Underground Storage Tanks on Indian Land
INDIAN UST	Underground Storage Tanks on Indian Land
CA FID UST	Facility Inventory Database
HIST UST	Hazardous Substance Storage Container Database

FEDERAL ASTM SUPPLEMENTAL

CONSENT	Superfund (CERCLA) Consent Decrees
ROD	Records Of Decision
Delisted NPL	National Priority List Deletions
FINDS	Facility Index System/Facility Identification Initiative Program Summary Report
HMIRS	Hazardous Materials Information Reporting System
MLTS	Material Licensing Tracking System
MINES	Mines Master Index File
NPL Liens	Federal Superfund Liens
PADS	PCB Activity Database System
DOD	Department of Defense Sites
INDIAN RESERV	Indian Reservations
UMTRA	Uranium Mill Tailings Sites
ODI	Open Dump Inventory
FUDS	Formerly Used Defense Sites
RAATS	RCRA Administrative Action Tracking System
TRIS	Toxic Chemical Release Inventory System
TSCA	Toxic Substances Control Act
SSTS	Section 7 Tracking Systems
FTTS INSP	FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

STATE OR LOCAL ASTM SUPPLEMENTAL

AST	Aboveground Petroleum Storage Tank Facilities
CLEANERS	Cleaner Facilities
CA WDS	Waste Discharge System
DEED	List of Deed Restrictions
NFE	Properties Needing Further Evaluation
NFA	No Further Action Determination
REF	Unconfirmed Properties Referred to Another Agency
SCH	School Property Evaluation Program
CA SLIC	Statewide SLIC Cases
HAZNET	Facility and Manifest Data
CONTRA COSTA CO. SITE LIST	Site List

EDR PROPRIETARY HISTORICAL DATABASES

Coal Gas	Former Manufactured Gas (Coal Gas) Sites

EXECUTIVE SUMMARY

BROWNFIELDS DATABASES

US BROWNFIELDS..... A Listing of Brownfields Sites
VCP..... Voluntary Cleanup Program Properties

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.
Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

FEDERAL ASTM STANDARD

CERCLIS: The Comprehensive Environmental Response, Compensation and Liability Information System contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA).
CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

A review of the CERCLIS list, as provided by EDR, and dated 08/10/2004 has revealed that there is 1 CERCLIS site within approximately 5 miles of the target property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
FULTON SHIPYARD	***307 FULTON SHIPYARD RD***	***>2 NNW***	***2***	***33***

STATE OR LOCAL ASTM SUPPLEMENTAL

Emissions Inventory Data: Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies

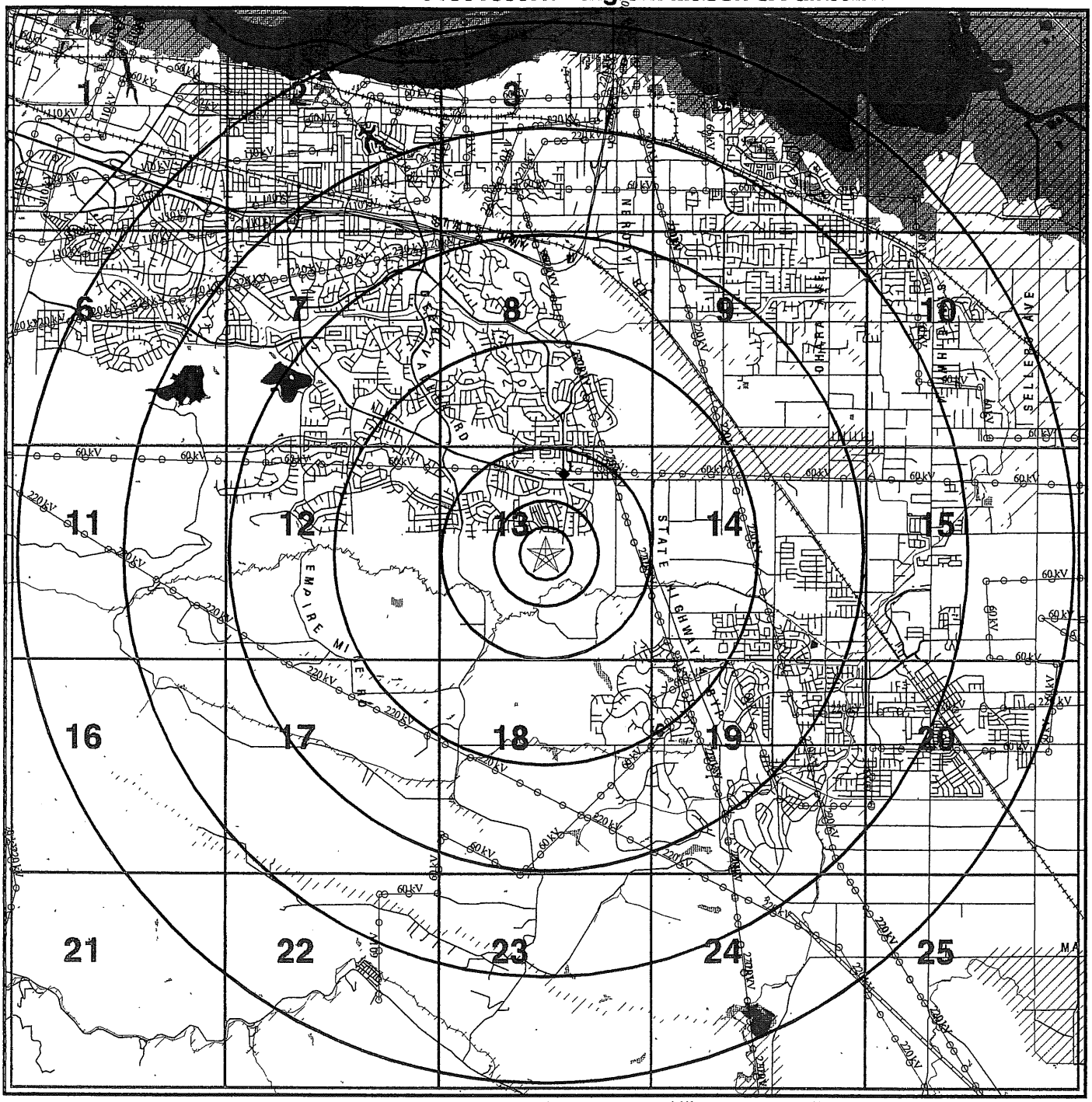
A review of the EMI list, as provided by EDR, and dated 12/31/2002 has revealed that there is 1 EMI site within approximately 1 mile of the target property.

Lower Elevation	Address	Dist / Dir	Map ID	Page
HILLCREST CLEANERS	***4361 HILLCREST AVE***	***1/2 - 1 NNE***	***1***	***30***

Due to poor or inadequate address information, the following sites were not mapped:

Site Name	Database(s)
BLUE GOOSE PROPERTIES	LUST, Cortese
SANTE FE PACIFIC PIPELINE PARTNERS	CERC-NFRAP
HOLLAND TRACT - PAPER PULP LANDSPREADING	SWF/LF
EAST CONTRA COSTA CO COLLECTION CNTR	SWF/LF
MANGINI BROS	UST, CONTRA COSTA CO. SITE LIST
LADD, L. JORDAN	UST, CONTRA COSTA CO. SITE LIST
MANGINI BROS	HIST UST
L. ORDAN LADD	HIST UST
NORMAN'S BRENTWOOD NURSERY	CA FID UST, CONTRA COSTA CO. SITE LIST
BILL BRANDT FORD, INC.	CA FID UST, CONTRA COSTA CO. SITE LIST
CHEAPER! #151	CA FID UST, CONTRA COSTA CO. SITE LIST
PROPERTY OF ROLAND LUKA	HAZNET
GOTLAND OIL INC	FINDS, EMI
SHOSHONE OIL CORPORATION	FINDS, EMI
IRONHOUSE SANITARY DISTRICT	FINDS, EMI
BETTENCOURT, EVELYN T	CONTRA COSTA CO. SITE LIST
HARDIN, CHARLES W	CONTRA COSTA CO. SITE LIST
BRANSCUM, LUTHER W	CONTRA COSTA CO. SITE LIST
SOITE, CATARINA	CONTRA COSTA CO. SITE LIST
KARAGLANIS, FRANK P	CONTRA COSTA CO. SITE LIST
A L CHRISTENSEN & SON	CONTRA COSTA CO. SITE LIST
MAGGIORA, MELVIN	CONTRA COSTA CO. SITE LIST
CARLISLE, ROY	CONTRA COSTA CO. SITE LIST
RIPPEE RANCH	CONTRA COSTA CO. SITE LIST
CLEMONS, EARL	CONTRA COSTA CO. SITE LIST
CAL TRANS HIGHWAY WIDENING	CONTRA COSTA CO. SITE LIST
MARSH CREEK #2 DEHYDRATION STATION	CONTRA COSTA CO. SITE LIST
NICHOLSON COMPANY	CONTRA COSTA CO. SITE LIST
COUGHRAN MECHANICAL SERVICES,	EMI

OVERVIEW MAP - 01301680.1r - Ingram Mason & Fairbairn

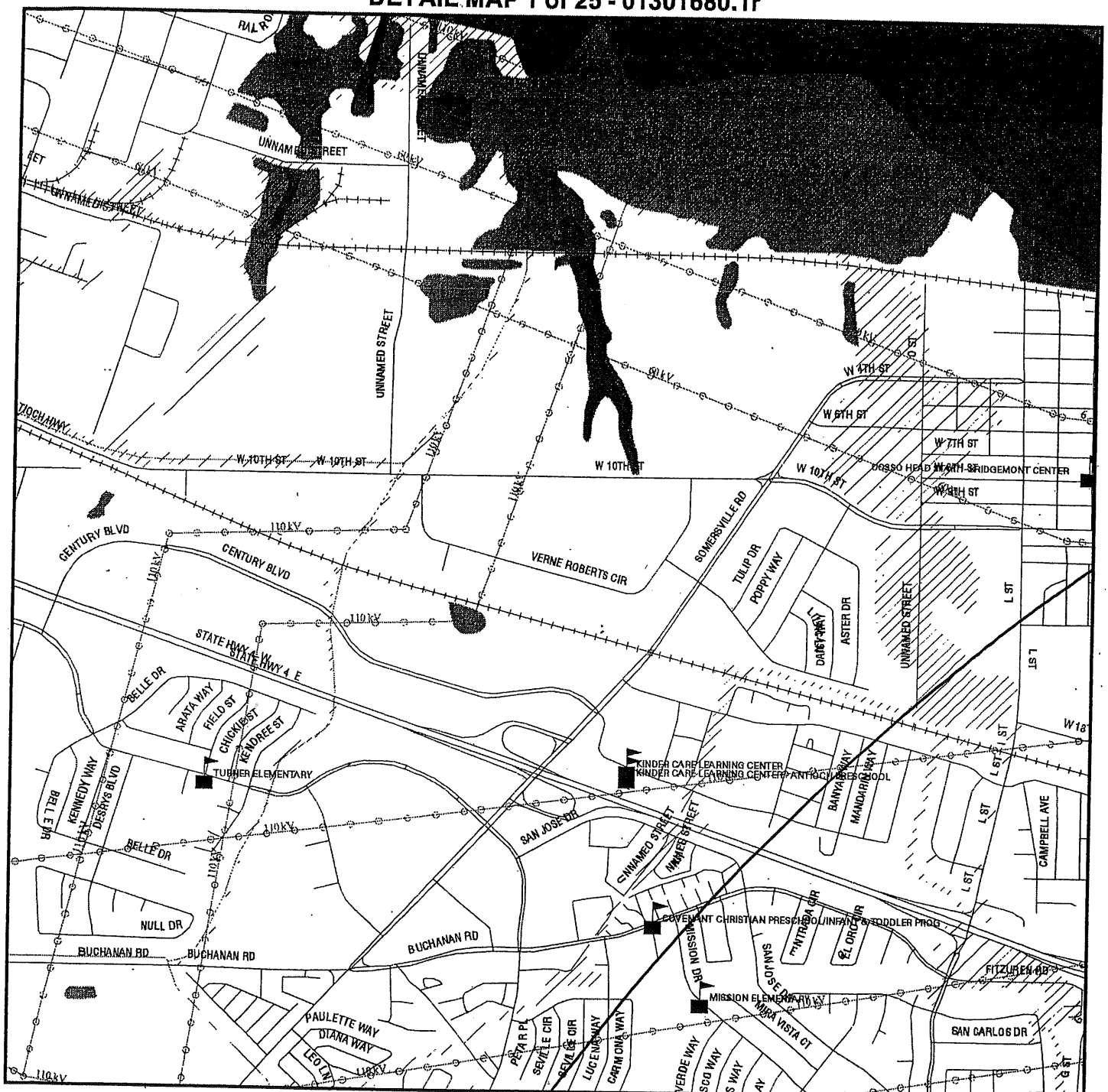


- ☆ Target Property
- ▲ Sites at elevations higher than or equal to the target property
- ◆ Sites at elevations lower than the target property
- Coal Gasification Sites
- National Priority List Sites
- Landfill Sites
- Dept. Defense Sites
- Indian Reservations BIA
- County Boundary
- Power transmission lines
- Oil & Gas pipelines
- 100-year flood zone
- 500-year flood zone
- Federal Wetlands
- Areas of Concern

TARGET PROPERTY:	Williamson Property	CUSTOMER:	Ingram Mason & Fairbairn
ADDRESS:	Prewett Ranch Rd/Hillcrest Ave	CONTACT:	Fred Serafin
CITY/STATE/ZIP:	Antioch CA 94531	INQUIRY #:	01301680.1r
LAT/LONG:	37.9516 / 121.7629	DATE:	November 05, 2004 8:55 am

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DETAIL MAP 1 of 25 - 01301680.1r

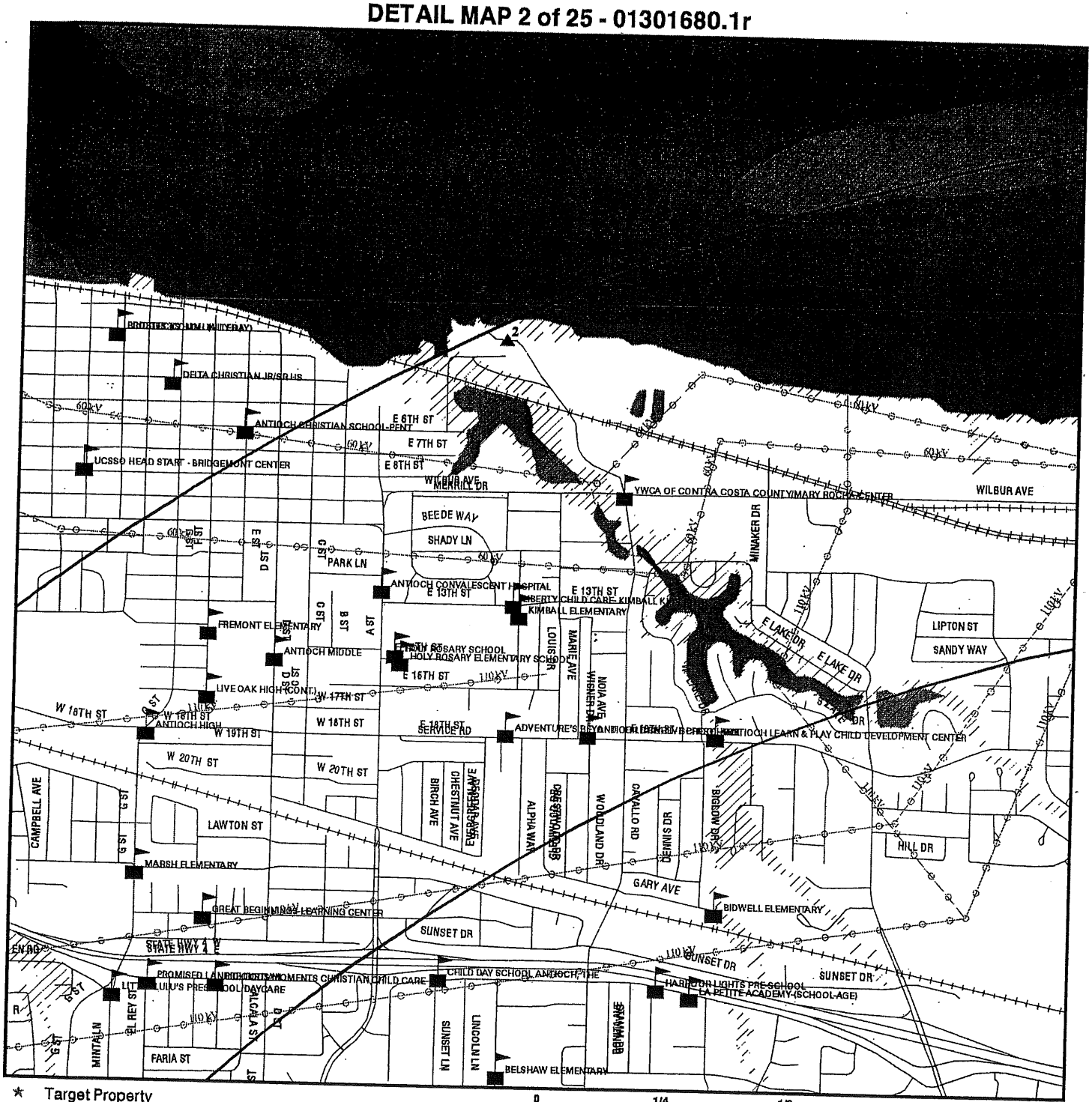


- ★ Target Property
- ▲ Sites at elevations higher than or equal to the target property
- ◆ Sites at elevations lower than the target property
- Coal Gasification Sites
- Sensitive Receptors
- National Priority List Sites
- Landfill Sites
- Dept. Defense Sites
- Indian Reservations BIA
- County Boundary
- Power transmission lines
- Oil & Gas pipelines
- 100-year flood zone
- 500-year flood zone
- Federal Wetlands
- Areas of Concern

TARGET PROPERTY:	Williamson Property	CUSTOMER:	Ingram Mason & Fairbairn
ADDRESS:	Prewett Ranch Rd/Hillcrest Ave	CONTACT:	Fred Serafin
CITY/STATE/ZIP:	Antioch CA 94531	INQUIRY #:	01301680.1r
LAT/LONG:	37.9516 / 121.7629	DATE:	November 05, 2004 8:55 am

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DETAIL MAP 2 of 25 - 01301680.1r

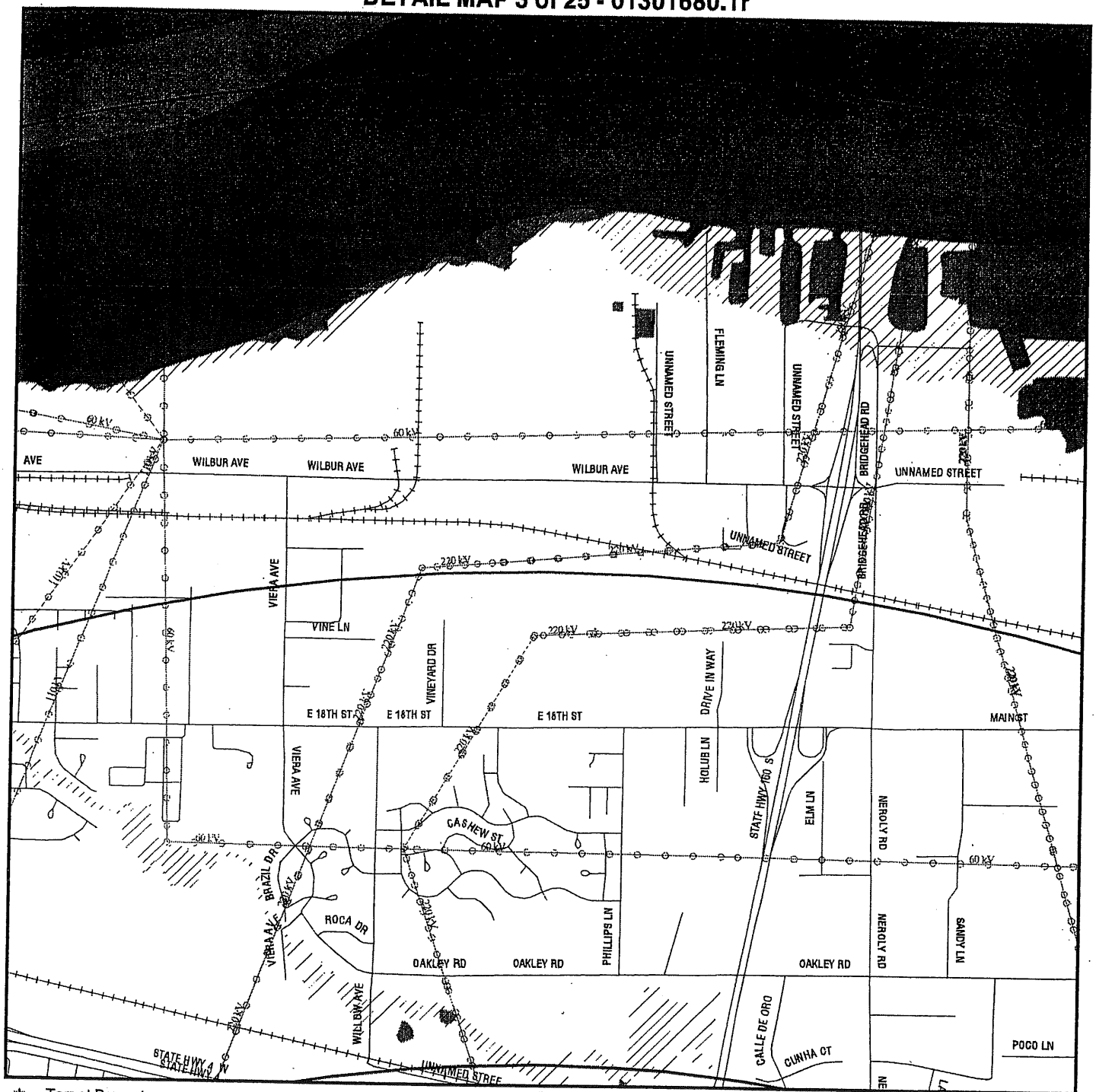


- ★ Target Property
- ▲ Sites at elevations higher than or equal to the target property
- ◆ Sites at elevations lower than the target property
- Coal Gasification Sites
- Sensitive Receptors
- National Priority List Sites
- Landfill Sites
- Dept. Defense Sites
- Indian Reservations BIA
- County Boundary
- Power transmission lines
- Oil & Gas pipelines
- 100-year flood zone
- 500-year flood zone
- Federal Wetlands
- Areas of Concern

TARGET PROPERTY:	Williamson Property	CUSTOMER:	Ingram Mason & Fairbairn
ADDRESS:	Prewett Ranch Rd/Hillcrest Ave	CONTACT:	Fred Serafin
CITY/STATE/ZIP:	Antioch CA 94531	INQUIRY #:	01301680.1r
LAT/LONG:	37.9516 / 121.7629	DATE:	November 05, 2004 8:55 am

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DETAIL MAP 3 of 25 - 01301680.1r

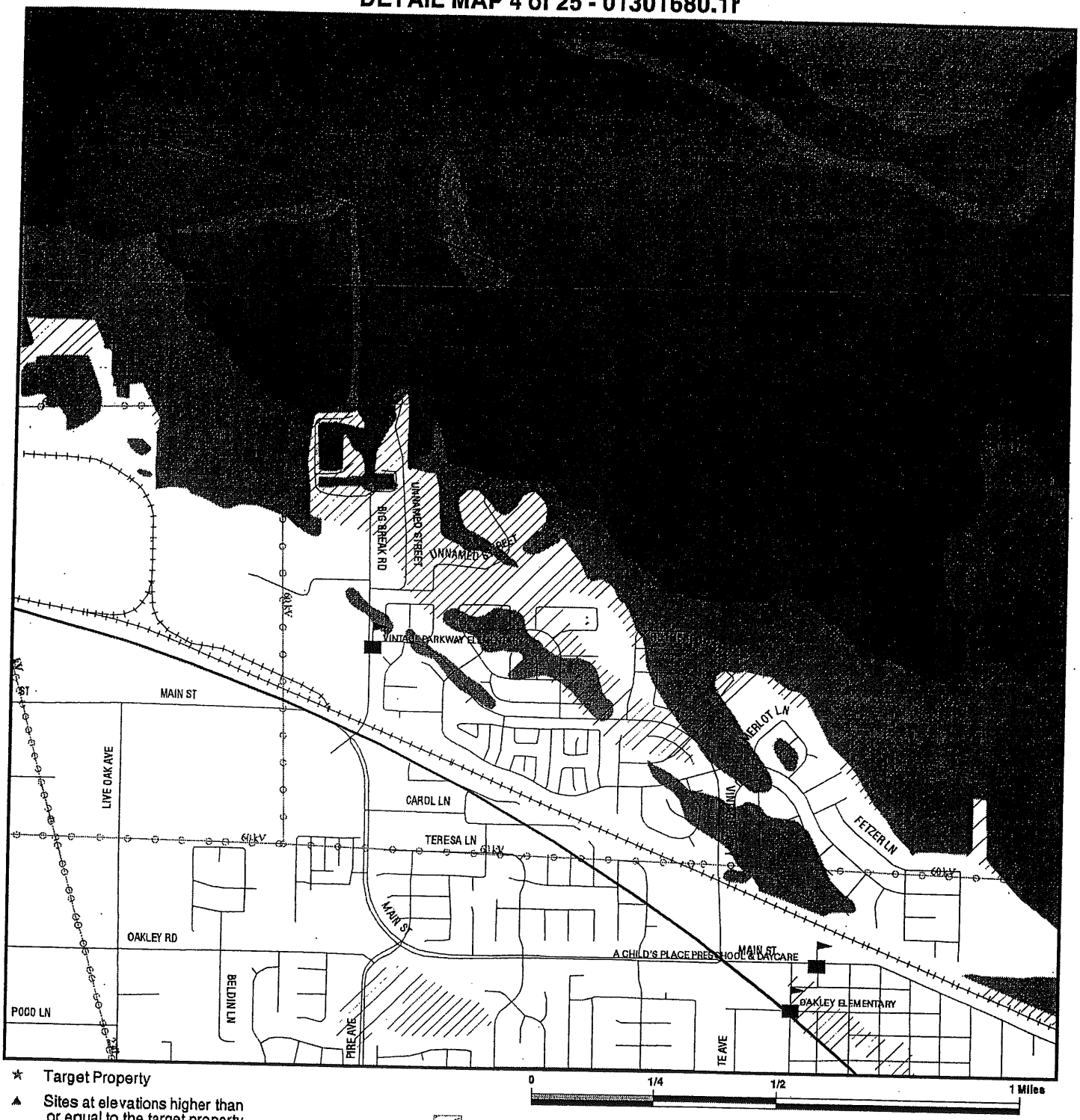


- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Coal Gasification Sites
- Sensitive Receptors
- National Priority List Sites
- Landfill Sites
- Dept. Defense Sites
- Indian Reservations BIA
- County Boundary
- Power transmission lines
- Oil & Gas pipelines
- 100-year flood zone
- 500-year flood zone
- Federal Wetlands
- Areas of Concern

TARGET PROPERTY:	Williamson Property	CUSTOMER:	Ingram Mason & Fairbairn
ADDRESS:	Prewett Ranch Rd/Hillcrest Ave	CONTACT:	Fred Serafin
CITY/STATE/ZIP:	Antioch CA 94531	INQUIRY #:	01301680.1r
LAT/LONG:	37.9516 / 121.7629	DATE:	November 05, 2004 8:56 am

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DETAIL MAP 4 of 25 - 01301680.1r

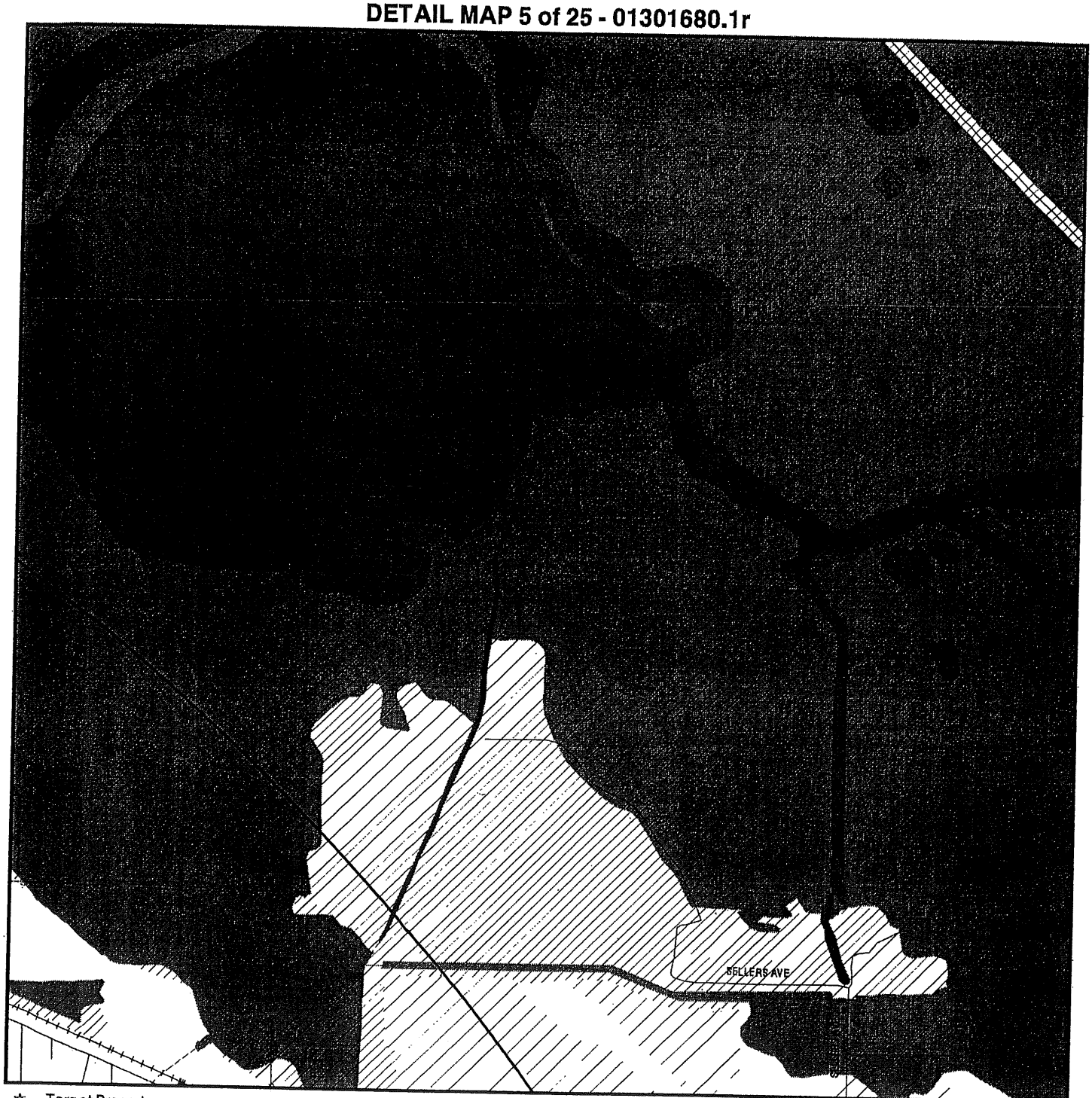


- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Coal Gasification Sites
- Sensitive Receptors
- National Priority List Sites
- Landfill Sites
- Dept. Defense Sites
- Indian Reservations BIA
- County Boundary
- Power transmission lines
- Oil & Gas pipelines
- 100-year flood zone
- 500-year flood zone
- Federal Wetlands
- Areas of Concern

TARGET PROPERTY:	Williamson Property	CUSTOMER:	Ingram Mason & Fairbairn
ADDRESS:	Prewett Ranch Rd/Hillcrest Ave	CONTACT:	Fred Serafin
CITY/STATE/ZIP:	Antioch CA 94531	INQUIRY #:	01301680.1r
LAT/LONG:	37.9516 / 121.7629	DATE:	November 05, 2004 8:56 am

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DETAIL MAP 5 of 25 - 01301680.1r

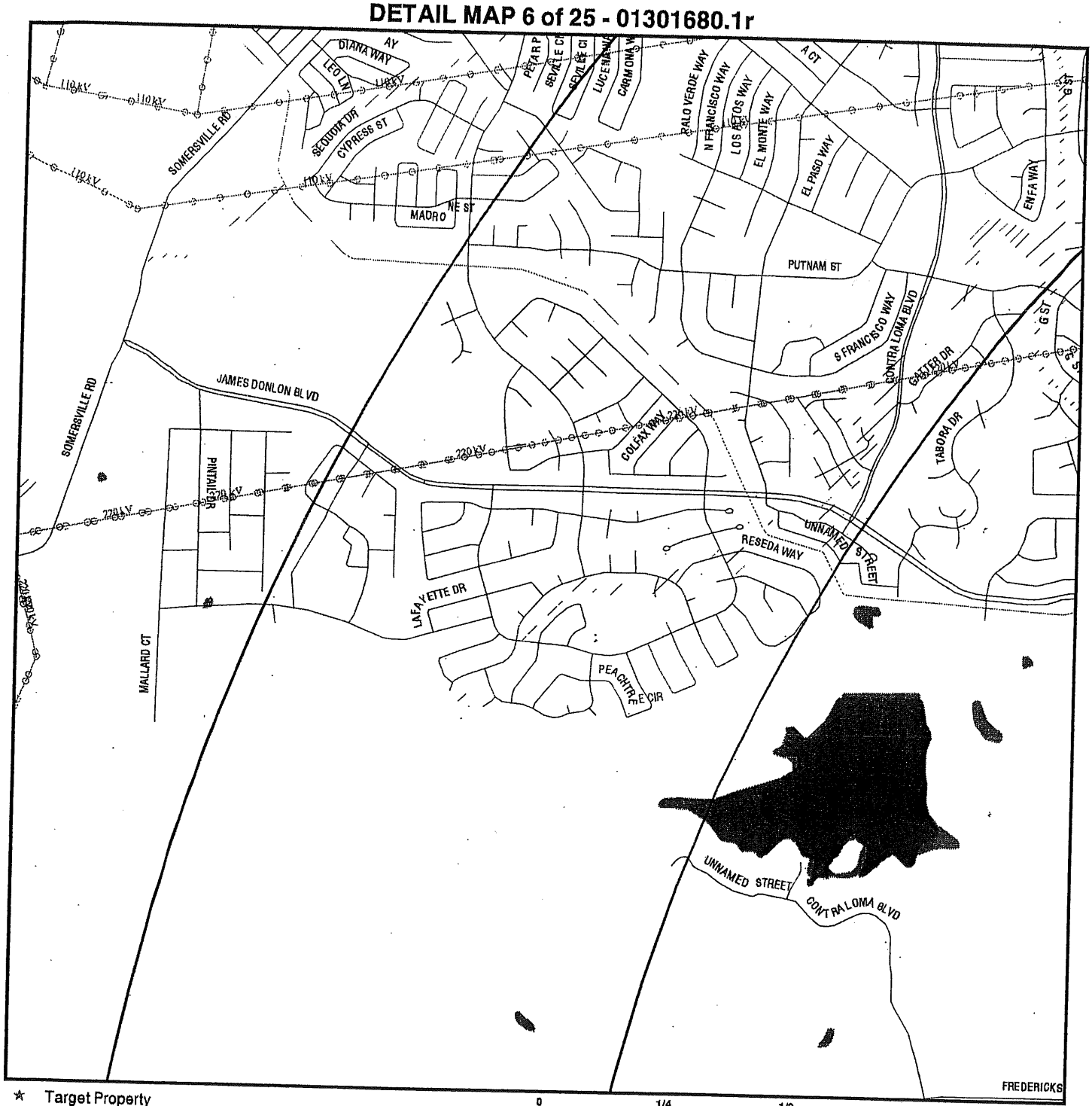


- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Coal Gasification Sites
- Sensitive Receptors
- National Priority List Sites
- Landfill Sites
- Dept. Defense Sites
- Indian Reservations BIA
- County Boundary
- Power transmission lines
- Oil & Gas pipelines
- 100-year flood zone
- 500-year flood zone
- Federal Wetlands
- Areas of Concern

TARGET PROPERTY:	Williamson Property	CUSTOMER:	Ingram Mason & Fairbairn
ADDRESS:	Prewett Ranch Rd/Hillcrest Ave	CONTACT:	Fred Serafin
CITY/STATE/ZIP:	Antioch CA 94531	INQUIRY #:	01301680.1r
LAT/LONG:	37.9516 / 121.7629	DATE:	November 05, 2004 8:56 am

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DETAIL MAP 6 of 25 - 01301680.1r

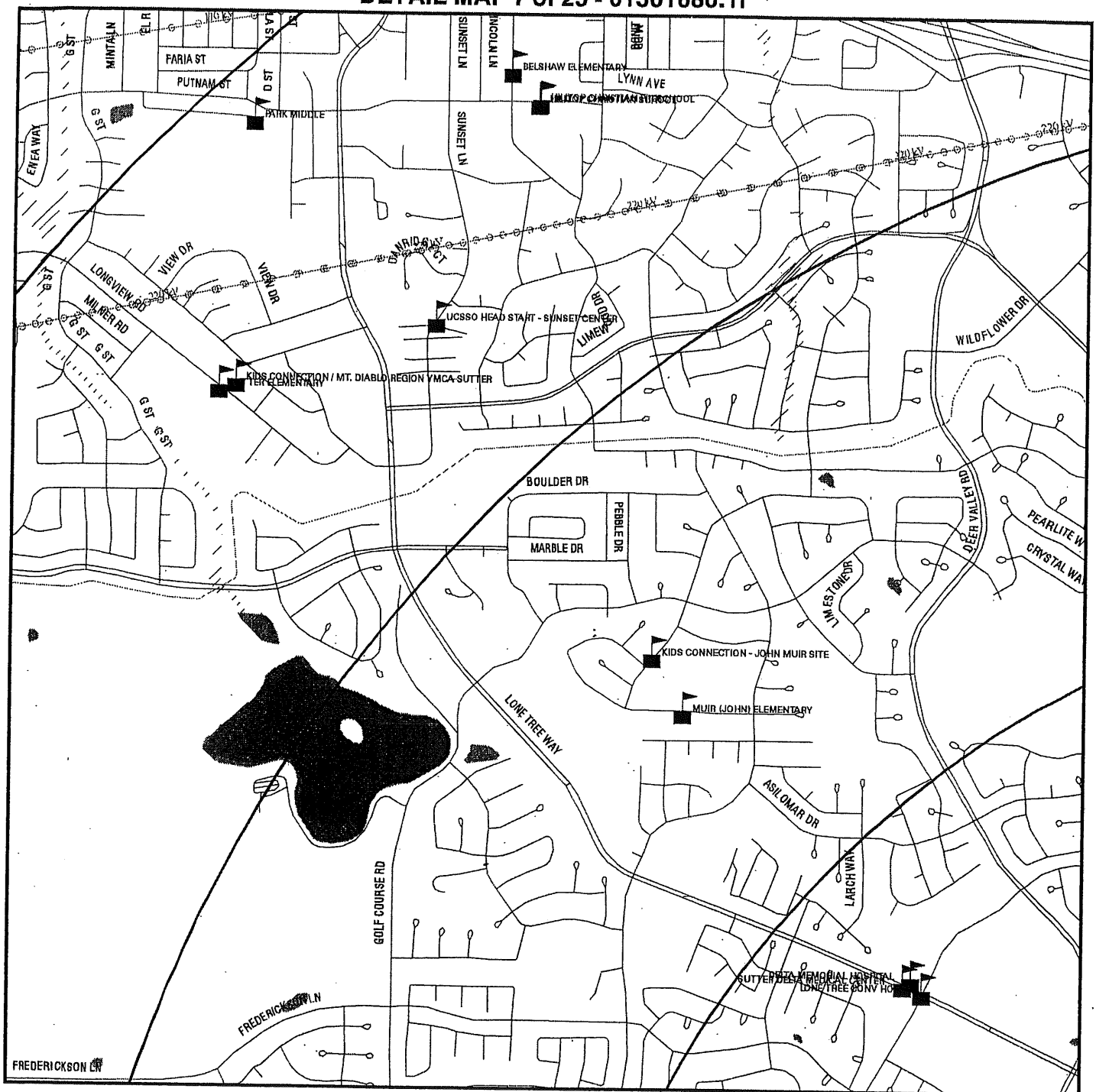


- ★ Target Property
- ▲ Sites at elevations higher than or equal to the target property
- ◆ Sites at elevations lower than the target property
- Coal Gasification Sites
- Sensitive Receptors
- National Priority List Sites
- Landfill Sites
- Dept. Defense Sites
- Indian Reservations BIA
- County Boundary
- Power transmission lines
- Oil & Gas pipelines
- 100-year flood zone
- 500-year flood zone
- Federal Wetlands
- Areas of Concern

TARGET PROPERTY:	Williamson Property	CUSTOMER:	Ingram Mason & Fairbairn
ADDRESS:	Prewett Ranch Rd/Hillcrest Ave	CONTACT:	Fred Serafin
CITY/STATE/ZIP:	Antioch CA 94531	INQUIRY #:	01301680.1r
LAT/LONG:	37.9516 / 121.7629	DATE:	November 05, 2004 8:57 am

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DETAIL MAP 7 of 25 - 01301680.1r



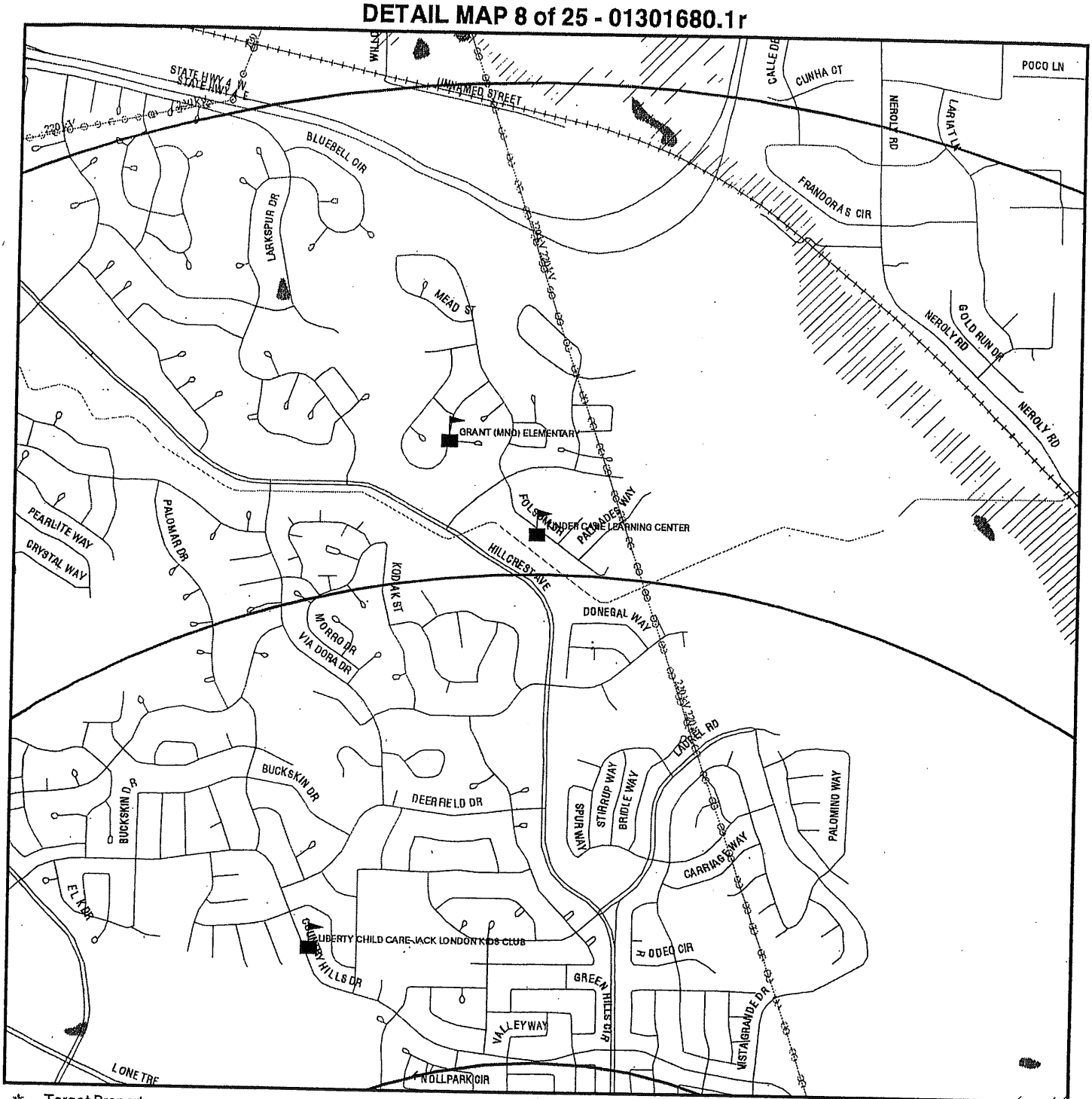
0 1/4 1/2 1 Miles

- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Coal Gasification Sites
- Sensitive Receptors
- National Priority List Sites
- Landfill Sites
- Dept. Defense Sites
- Indian Reservations BIA
- County Boundary
- Power transmission lines
- Oil & Gas pipelines
- 100-year flood zone
- 500-year flood zone
- Federal Wetlands
- Areas of Concern

TARGET PROPERTY:	Williamson Property	CUSTOMER:	Ingram Mason & Fairbairn
ADDRESS:	Prewett Ranch Rd/Hillcrest Ave	CONTACT:	Fred Serafin
CITY/STATE/ZIP:	Antioch CA 94531	INQUIRY #:	01301680.1r
LAT/LONG:	37.9516 / 121.7629	DATE:	November 05, 2004 8:57 am

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DETAIL MAP 8 of 25 - 01301680.1r



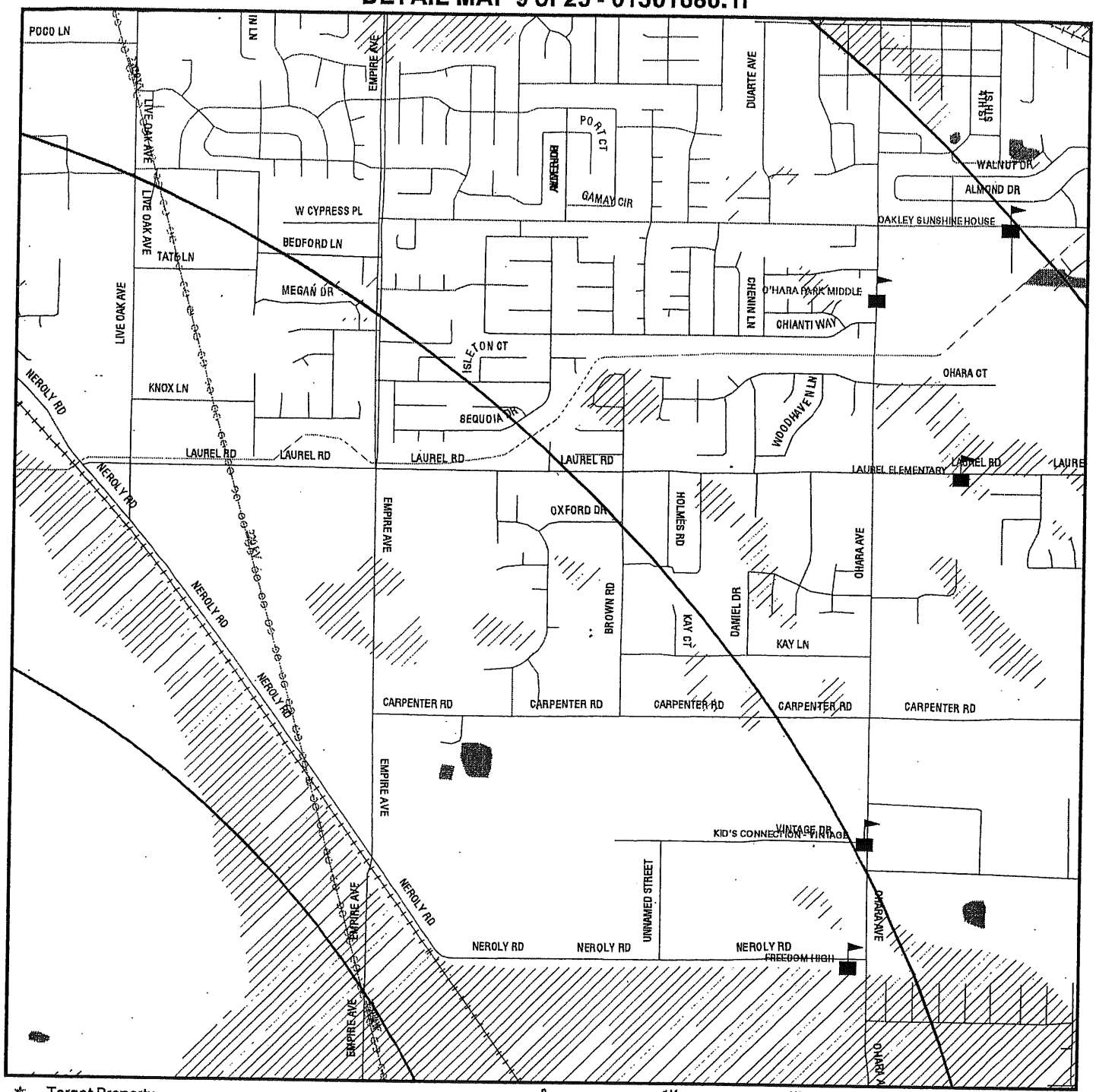
0 1/4 1/2 1 Miles

- ☆ Target Property
- ▲ Sites at elevations higher than or equal to the target property
- ◆ Sites at elevations lower than the target property
- Coal Gasification Sites
- Sensitive Receptors
- National Priority List Sites
- Landfill Sites
- Dept. Defense Sites
- Indian Reservations BIA
- County Boundary
- Power transmission lines
- Oil & Gas pipelines
- 100-year flood zone
- 500-year flood zone
- Federal Wetlands
- Areas of Concern

TARGET PROPERTY:	Williamson Property	CUSTOMER:	Ingram Mason & Fairbairn
ADDRESS:	Prewett Ranch Rd/Hillcrest Ave	CONTACT:	Fred Serafin
CITY/STATE/ZIP:	Antioch CA 94531	INQUIRY #:	01301680.1r
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DETAIL MAP 9 of 25 - 01301680.1r

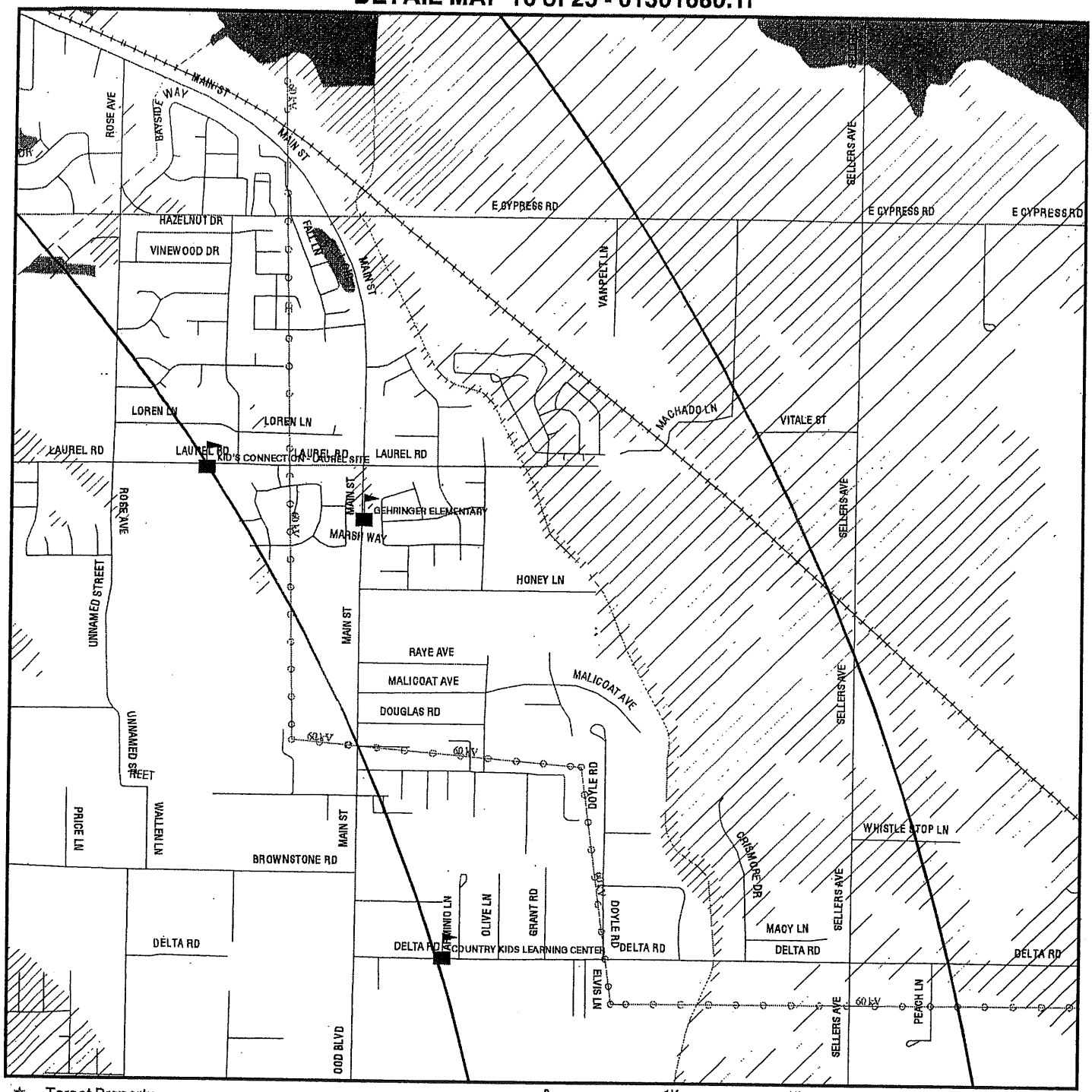


- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Coal Gasification Sites
- Sensitive Receptors
- National Priority List Sites
- Landfill Sites
- Dept. Defense Sites
- Indian Reservations BIA
- County Boundary
- Power transmission lines
- Oil & Gas pipelines
- 100-year flood zone
- 500-year flood zone
- Federal Wetlands
- Areas of Concern

TARGET PROPERTY:	Williamson Property	CUSTOMER:	Ingram Mason & Fairbairn
ADDRESS:	Prewett Ranch Rd/Hillcrest Ave	CONTACT:	Fred Serafin
CITY/STATE/ZIP:	Antioch CA 94531	INQUIRY #:	01301680.1r
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DETAIL MAP 10 of 25 - 01301680.1r

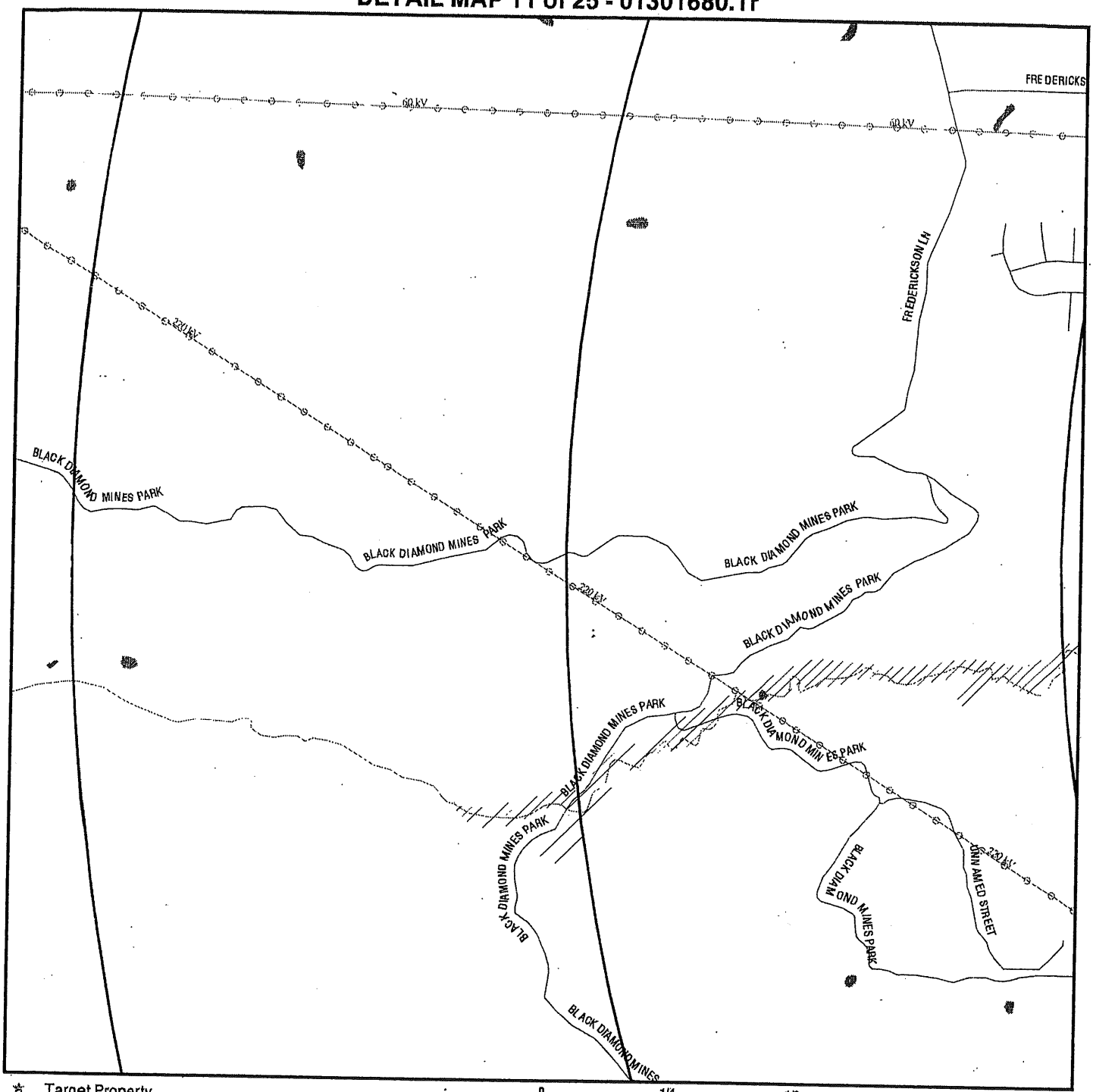


- ★ Target Property
- ▲ Sites at elevations higher than or equal to the target property
- ◆ Sites at elevations lower than the target property
- Coal Gasification Sites
- Sensitive Receptors
- National Priority List Sites
- Landfill Sites
- Dept. Defense Sites
- Indian Reservations BIA
- County Boundary
- Power transmission lines
- Oil & Gas pipelines
- 100-year flood zone
- 500-year flood zone
- Federal Wetlands
- Areas of Concern

TARGET PROPERTY:	Williamson Property	CUSTOMER:	Ingram Mason & Fairbairn
ADDRESS:	Prewett Ranch Rd/Hillcrest Ave	CONTACT:	Fred Serafin
CITY/STATE/ZIP:	Antioch CA 94531	INQUIRY #:	01301680.1r
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DETAIL MAP 11 of 25 - 01301680.1r



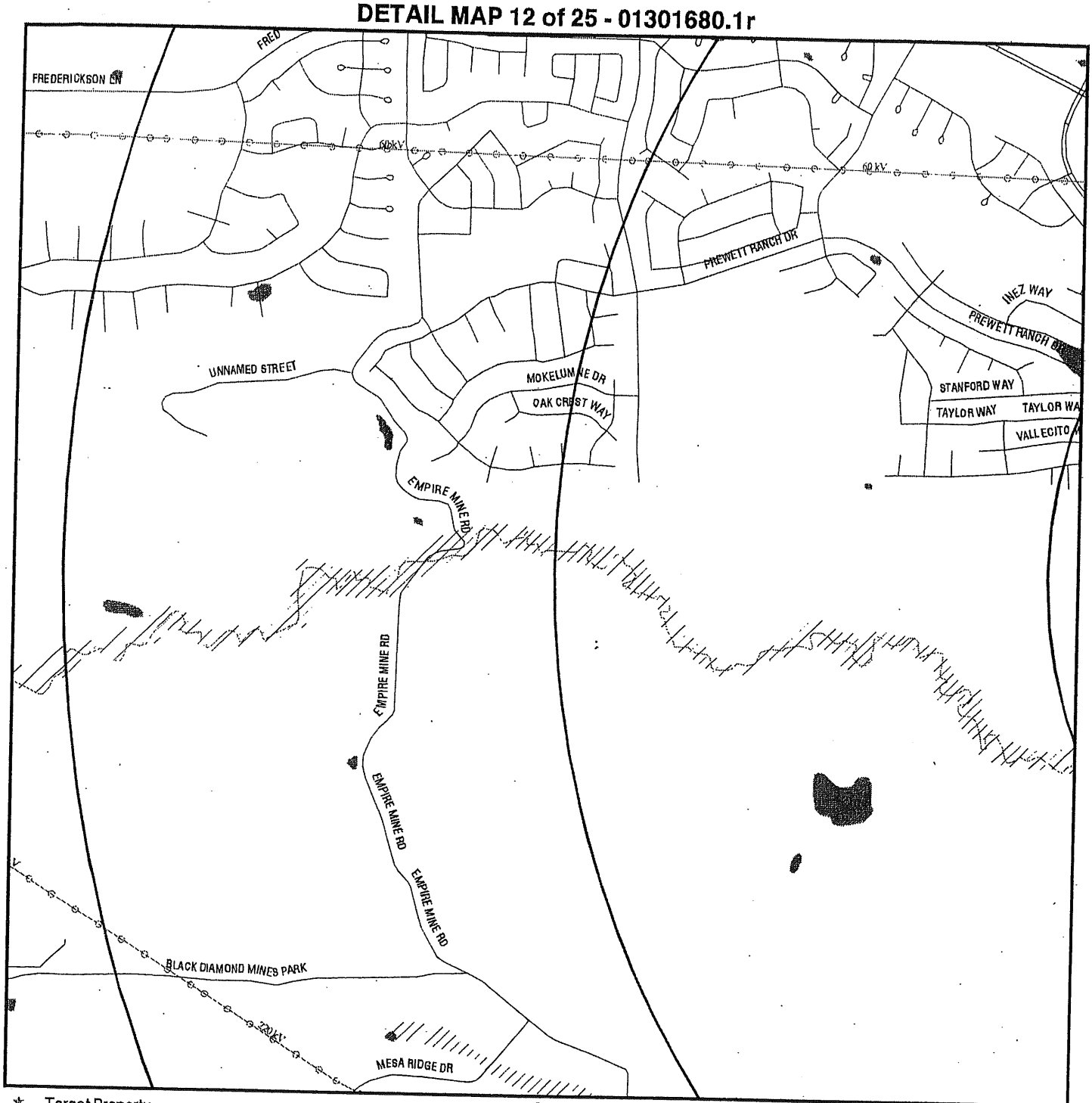
- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Coal Gasification Sites
- Sensitive Receptors
- National Priority List Sites
- Landfill Sites
- Dept. Defense Sites
- Indian Reservations BIA
- County Boundary
- Power transmission lines
- Oil & Gas pipelines
- 100-year flood zone
- 500-year flood zone
- Federal Wetlands
- Areas of Concern

0 1/4 1/2 1 Miles

TARGET PROPERTY:	Williamson Property	CUSTOMER:	Ingram Mason & Fairbairn
ADDRESS:	Prewett Ranch Rd/Hillcrest Ave	CONTACT:	Fred Serafin
CITY/STATE/ZIP:	Antioch CA 94531	INQUIRY #:	01301680.1r
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DETAIL MAP 12 of 25 - 01301680.1r



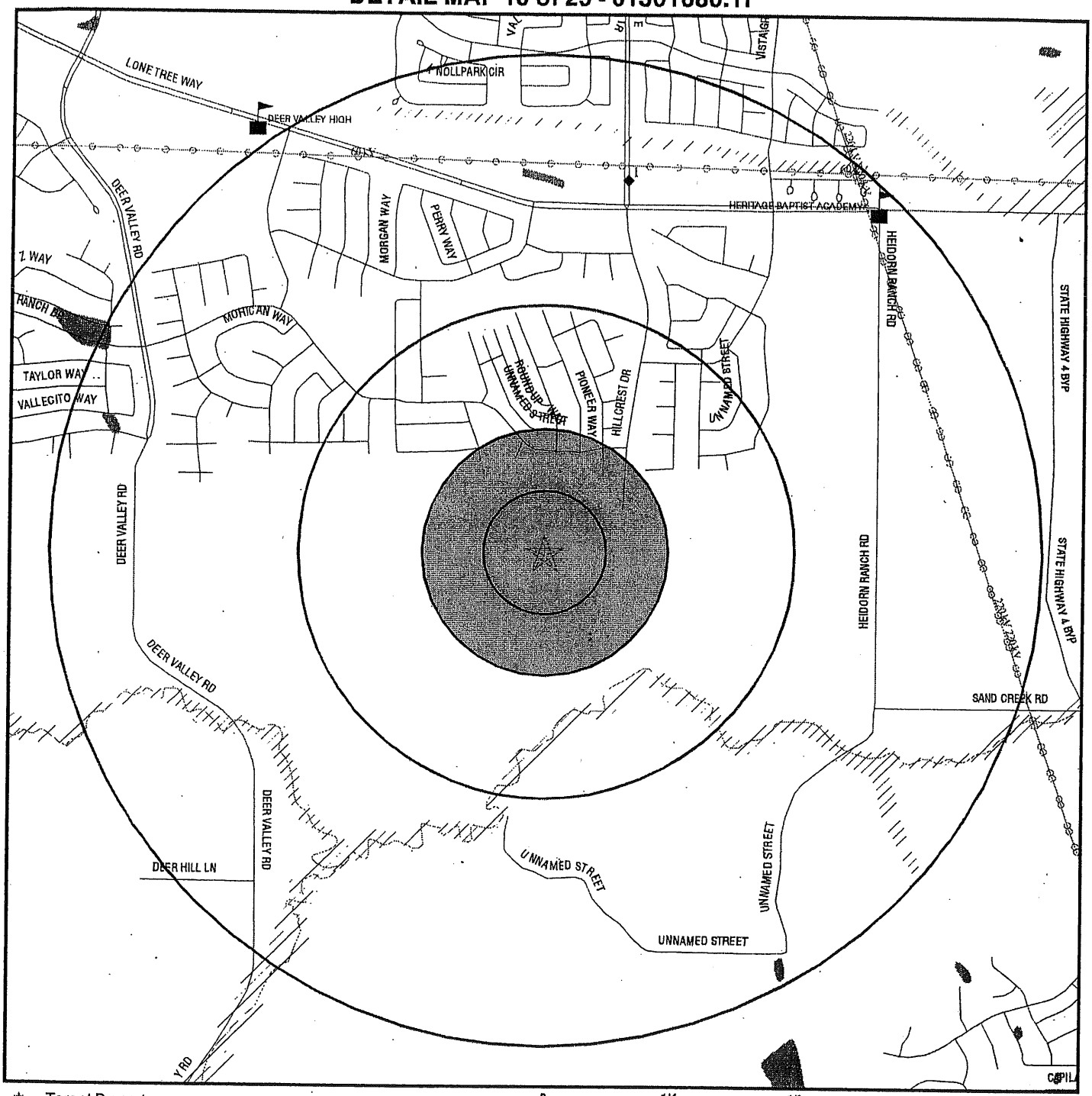
0 1/4 1/2 1 Miles

- ☆ Target Property
- ▲ Sites at elevations higher than or equal to the target property
- ◆ Sites at elevations lower than the target property
- Coal Gasification Sites
- Sensitive Receptors
- National Priority List Sites
- Landfill Sites
- Dept. Defense Sites
- Indian Reservations BIA
- County Boundary
- Power transmission lines
- Oil & Gas pipelines
- 100-year flood zone
- 500-year flood zone
- Federal Wetlands
- Areas of Concern

TARGET PROPERTY:	Williamson Property	CUSTOMER:	Ingram Mason & Fairbairn
ADDRESS:	Prewett Ranch Rd/Hillcrest Ave	CONTACT:	Fred Serafin
CITY/STATE/ZIP:	Antioch CA 94531	INQUIRY #:	01301680.1r
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DETAIL MAP 13 of 25 - 01301680.1r

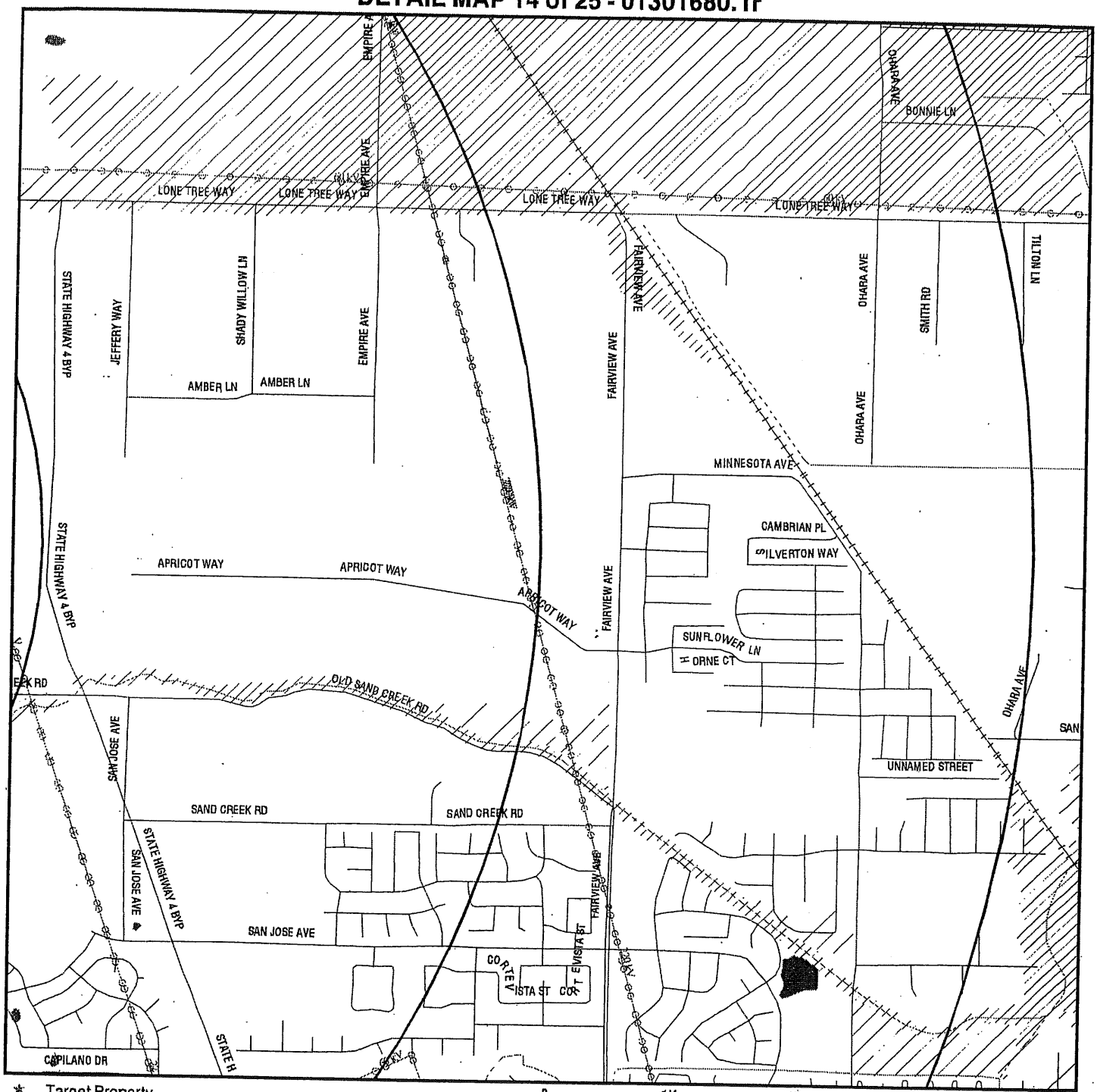


- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Coal Gasification Sites
- Sensitive Receptors
- National Priority List Sites
- Landfill Sites
- Dept. Defense Sites
- Indian Reservations BIA
- County Boundary
- Power transmission lines
- Oil & Gas pipelines
- 100-year flood zone
- 500-year flood zone
- Federal Wetlands
- Areas of Concern

TARGET PROPERTY:	Williamson Property	CUSTOMER:	Ingram Mason & Fairbairn
ADDRESS:	Prewett Ranch Rd/Hillcrest Ave	CONTACT:	Fred Serafin
CITY/STATE/ZIP:	Antioch CA 94531	INQUIRY #:	01301680.1r
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DETAIL MAP 14 of 25 - 01301680.1r

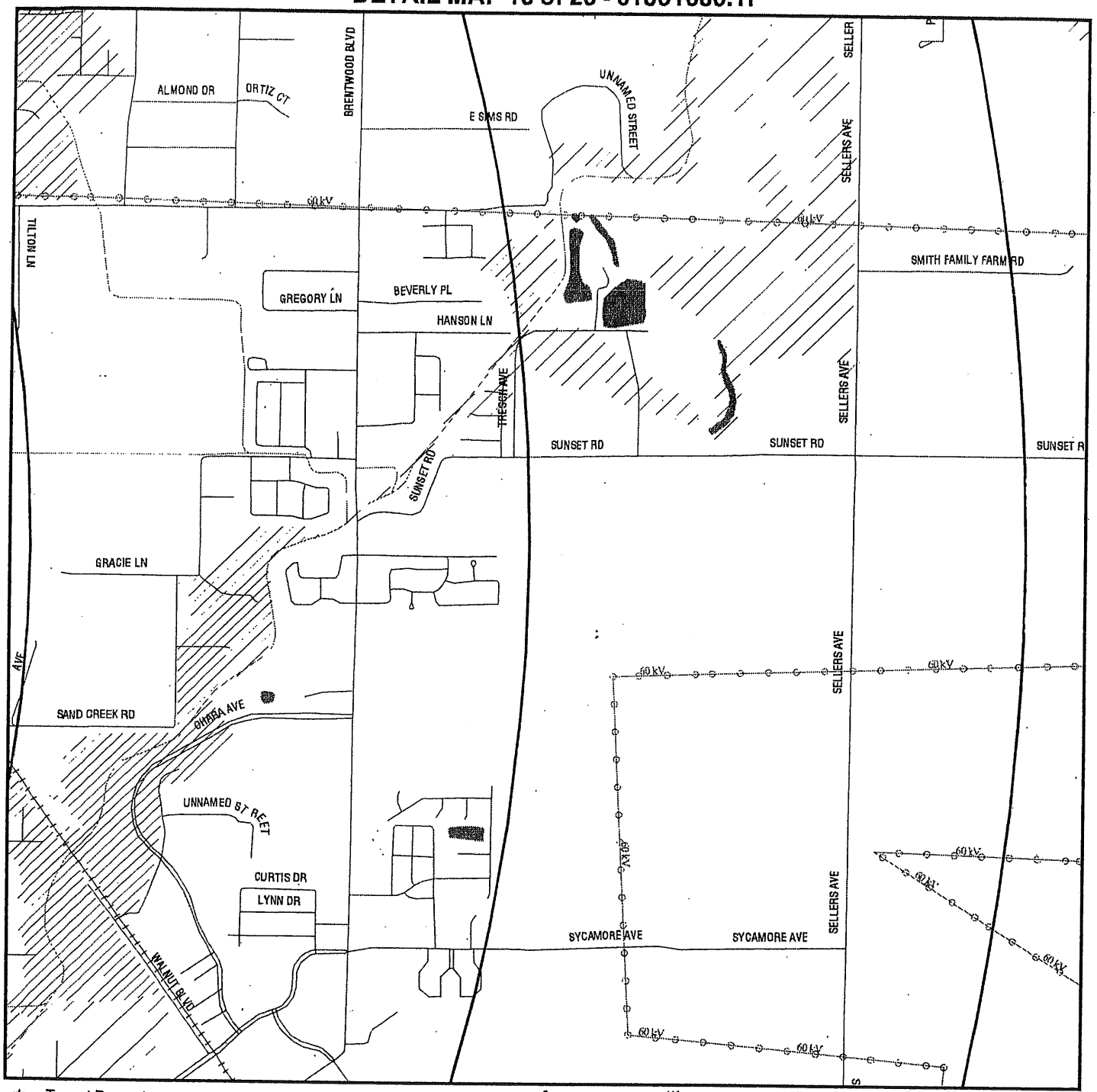


- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Coal Gasification Sites
- Sensitive Receptors
- National Priority List Sites
- Landfill Sites
- Dept. Defense Sites
- Indian Reservations BIA
- County Boundary
- Power transmission lines
- Oil & Gas pipelines
- 100-year flood zone
- 500-year flood zone
- Federal Wetlands
- Areas of Concern

TARGET PROPERTY:	Williamson Property	CUSTOMER:	Ingram Mason & Fairbairn
ADDRESS:	Prewett Ranch Rd/Hillcrest Ave	CONTACT:	Fred Serafin
CITY/STATE/ZIP:	Antioch CA 94531	INQUIRY #:	01301680.1r
LAT/LONG:	37.9516 / 121.7629	DATE:	November 05, 2004 8:59 am

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DETAIL MAP 15 of 25 - 01301680.1r

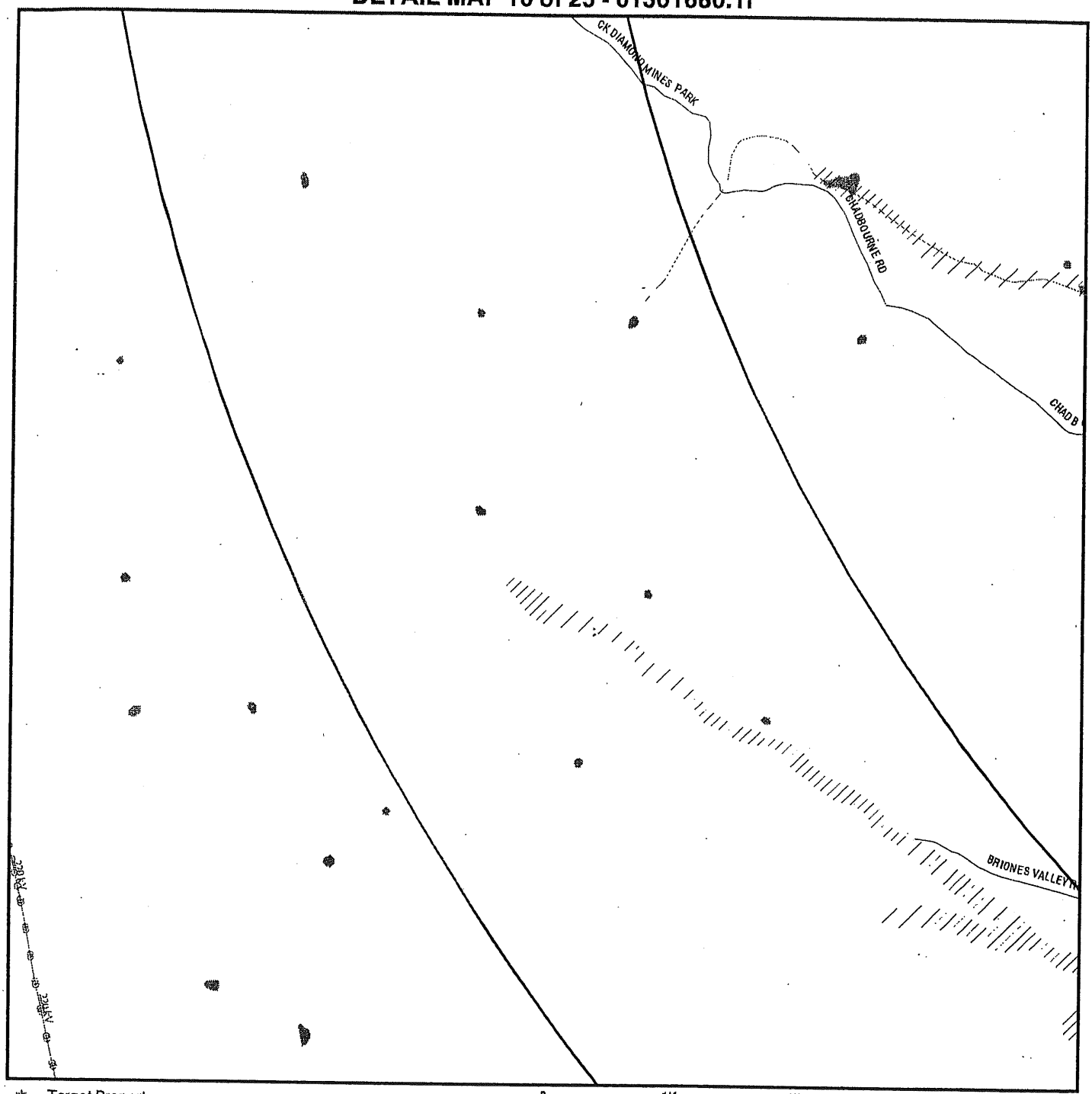


- ★ Target Property
- ▲ Sites at elevations higher than or equal to the target property
- ◆ Sites at elevations lower than the target property
- Coal Gasification Sites
- Sensitive Receptors
- National Priority List Sites
- Landfill Sites
- Dept. Defense Sites
- Indian Reservations BIA
- County Boundary
- Power transmission lines
- Oil & Gas pipelines
- 100-year flood zone
- 500-year flood zone
- Federal Wetlands
- Areas of Concern

TARGET PROPERTY:	Williamson Property	CUSTOMER:	Ingram Mason & Fairbairn
ADDRESS:	Prewett Ranch Rd/Hillcrest Ave	CONTACT:	Fred Serafin
CITY/STATE/ZIP:	Antioch CA 94531	INQUIRY #:	01301680.1r
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DETAIL MAP 16 of 25 - 01301680.1r

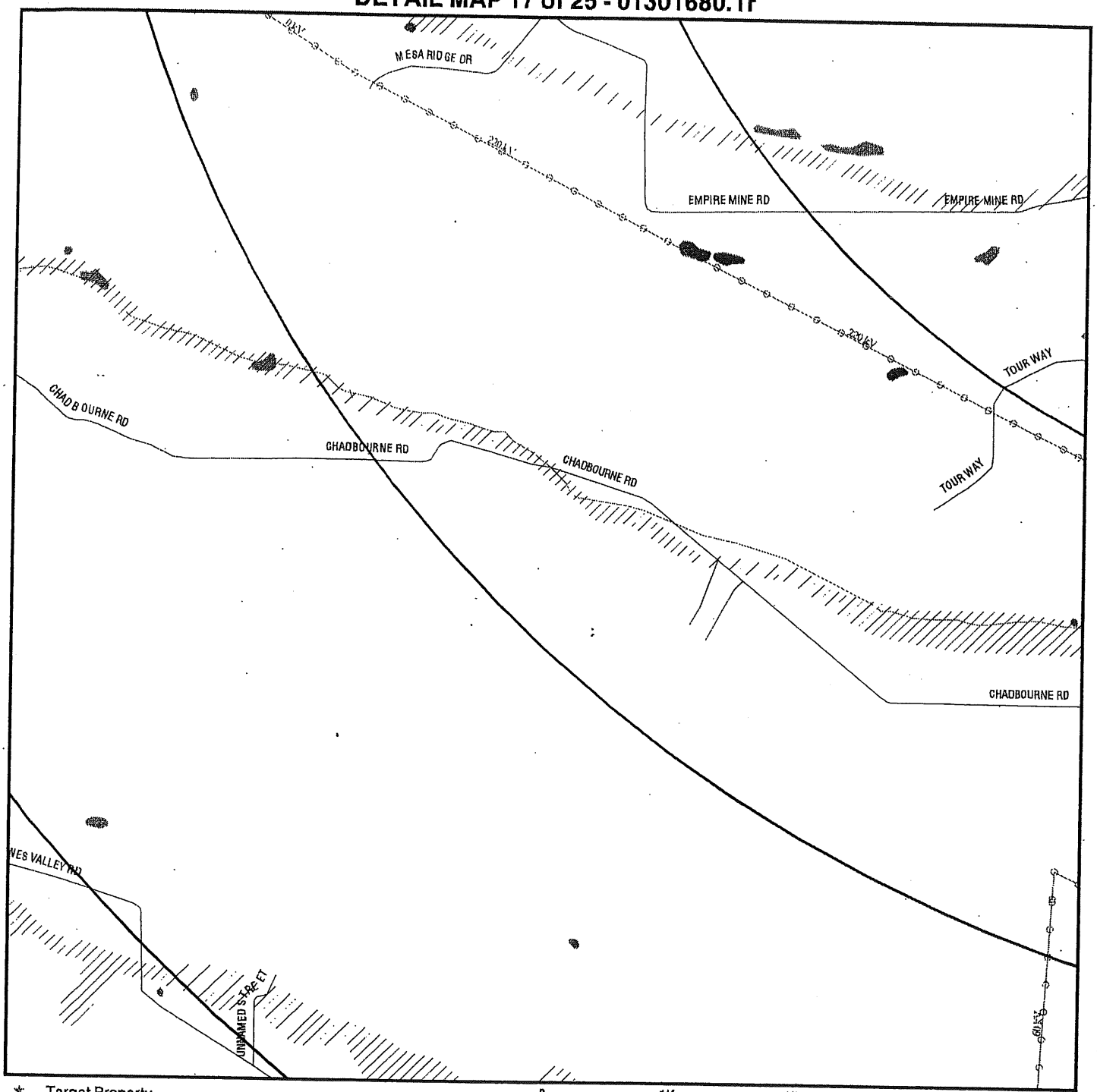


- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Coal Gasification Sites
- Sensitive Receptors
- National Priority List Sites
- Landfill Sites
- Dept. Defense Sites
- Indian Reservations BIA
- County Boundary
- Power transmission lines
- Oil & Gas pipelines
- 100-year flood zone
- 500-year flood zone
- Federal Wetlands
- Areas of Concern

TARGET PROPERTY:	Williamson Property	CUSTOMER:	Ingram Mason & Fairbairn
ADDRESS:	Prewett Ranch Rd/Hillcrest Ave	CONTACT:	Fred Serafin
CITY/STATE/ZIP:	Antioch CA 94531	INQUIRY #:	01301680.1r
LAT/LONG:	37.9516 / 121.7629	DATE:	November 05, 2004 8:59 am

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DETAIL MAP 17 of 25 - 01301680.1r

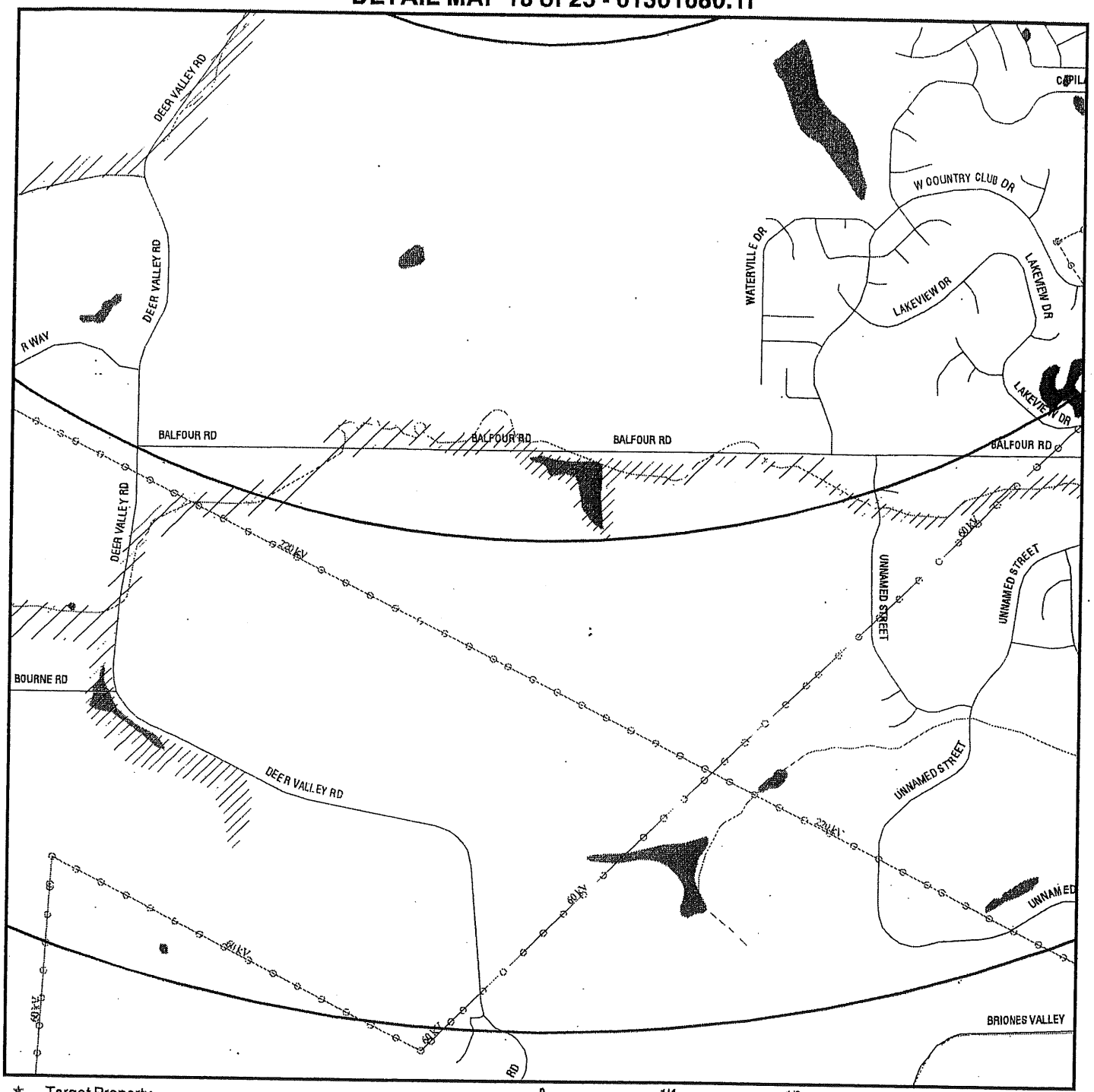


- ★ Target Property
- ▲ Sites at elevations higher than or equal to the target property
- ◆ Sites at elevations lower than the target property
- Coal Gasification Sites
- Sensitive Receptors
- National Priority List Sites
- Landfill Sites
- Dept. Defense Sites
- Indian Reservations BIA
- County Boundary
- Power transmission lines
- Oil & Gas pipelines
- 100-year flood zone
- 500-year flood zone
- Federal Wetlands
- Areas of Concern

TARGET PROPERTY:	Williamson Property	CUSTOMER:	Ingram Mason & Fairbairn
ADDRESS:	Prewett Ranch Rd/Hillcrest Ave	CONTACT:	Fred Serafin
CITY/STATE/ZIP:	Antioch CA 94531	INQUIRY #:	01301680.1r
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DETAIL MAP 18 of 25 - 01301680.1r



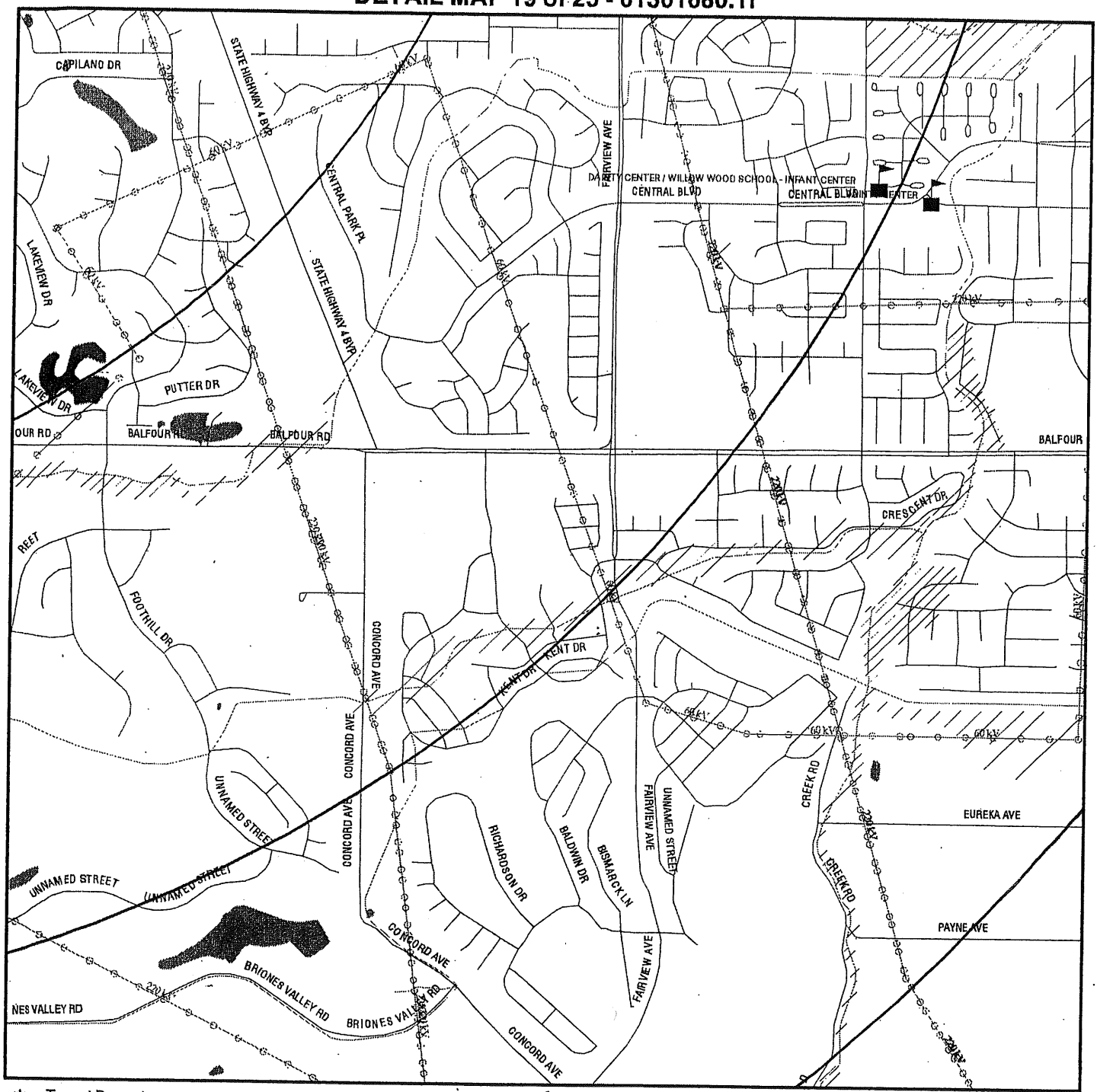
- ☆ Target Property
- ▲ Sites at elevations higher than or equal to the target property
- ◆ Sites at elevations lower than the target property
- Coal Gasification Sites
- Sensitive Receptors
- National Priority List Sites
- Landfill Sites
- Dept. Defense Sites
- Indian Reservations BIA
- County Boundary
- Power transmission lines
- Oil & Gas pipelines
- 100-year flood zone
- 500-year flood zone
- Federal Wetlands
- Areas of Concern

0 1/4 1/2 1 Miles

TARGET PROPERTY:	Williamson Property	CUSTOMER:	Ingram Mason & Fairbairn
ADDRESS:	Prewett Ranch Rd/Hillcrest Ave	CONTACT:	Fred Serafin
CITY/STATE/ZIP:	Antioch CA 94531	INQUIRY #:	01301680.1r
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- ☆ Target Property
- ▲ Sites at elevations higher than or equal to the target property
- ◆ Sites at elevations lower than the target property
- Coal Gasification Sites
- Sensitive Receptors
- National Priority List Sites
- Landfill Sites
- Dept. Defense Sites

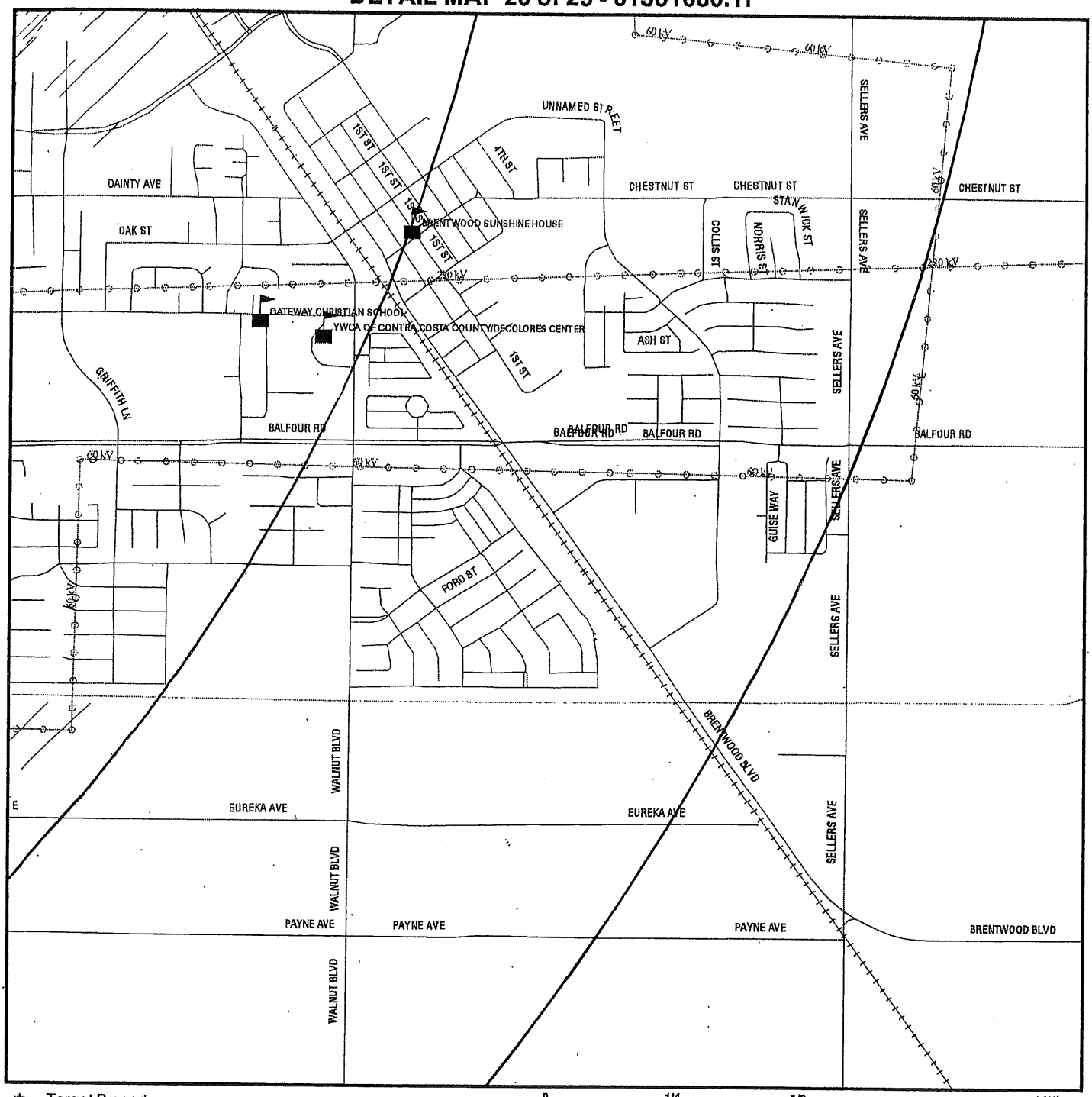
0 1/4 1/2 1 Miles

- Indian Reservations BIA
- County Boundary
- Power transmission lines
- Oil & Gas pipelines
- 100-year flood zone
- 500-year flood zone
- Federal Wetlands
- Areas of Concern

TARGET PROPERTY:	Williamson Property	CUSTOMER:	Ingram Mason & Fairbairn
ADDRESS:	Prewett Ranch Rd/Hillcrest Ave	CONTACT:	Fred Serafin
CITY/STATE/ZIP:	Antioch CA 94531	INQUIRY #:	01301680.1r
LAT/LONG:	37.9516 / 121.7629	DATE:	November 05, 2004 9:00 am

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- ★ Target Property
- ▲ Sites at elevations higher than or equal to the target property
- ♦ Sites at elevations lower than the target property
- Coal Gasification Sites
- Sensitive Receptors
- National Priority List Sites
- Landfill Sites
- Dept. Defense Sites

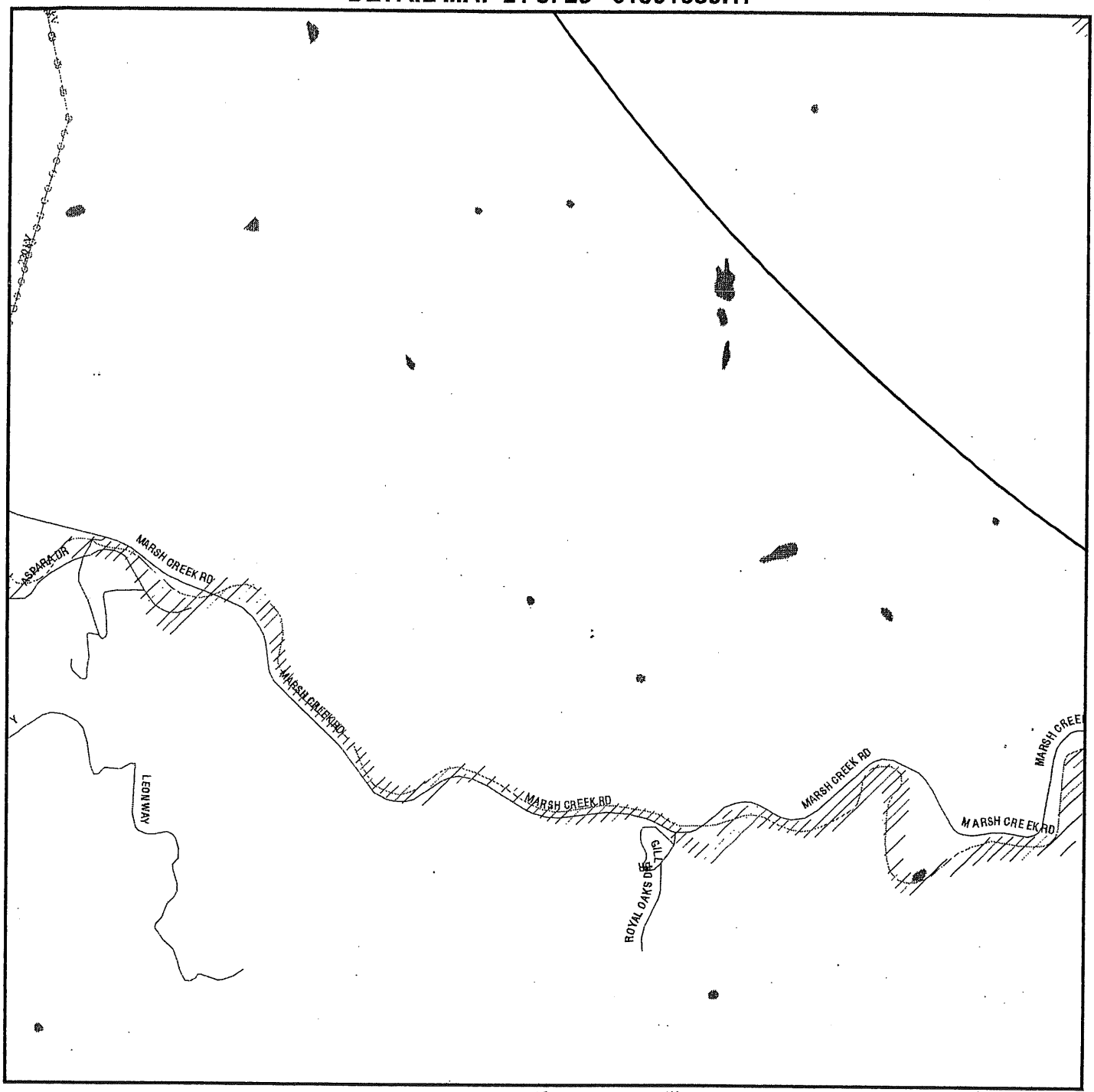
0 1/4 1/2 1 Miles

- Indian Reservations BIA
- County Boundary
- Power transmission lines
- Oil & Gas pipelines
- 100-year flood zone
- 500-year flood zone
- Areas of Concern

TARGET PROPERTY:	Williamson Property	CUSTOMER:	Ingram Mason & Fairbairn
ADDRESS:	Prewett Ranch Rd/Hillcrest Ave	CONTACT:	Fred Serafin
CITY/STATE/ZIP:	Antioch CA 94531	INQUIRY #:	01301680.1r
LAT/LONG:	37.9516 / 121.7629	DATE:	November 05, 2004 9:00 am

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DETAIL MAP 21 of 25 - 01301680.1r



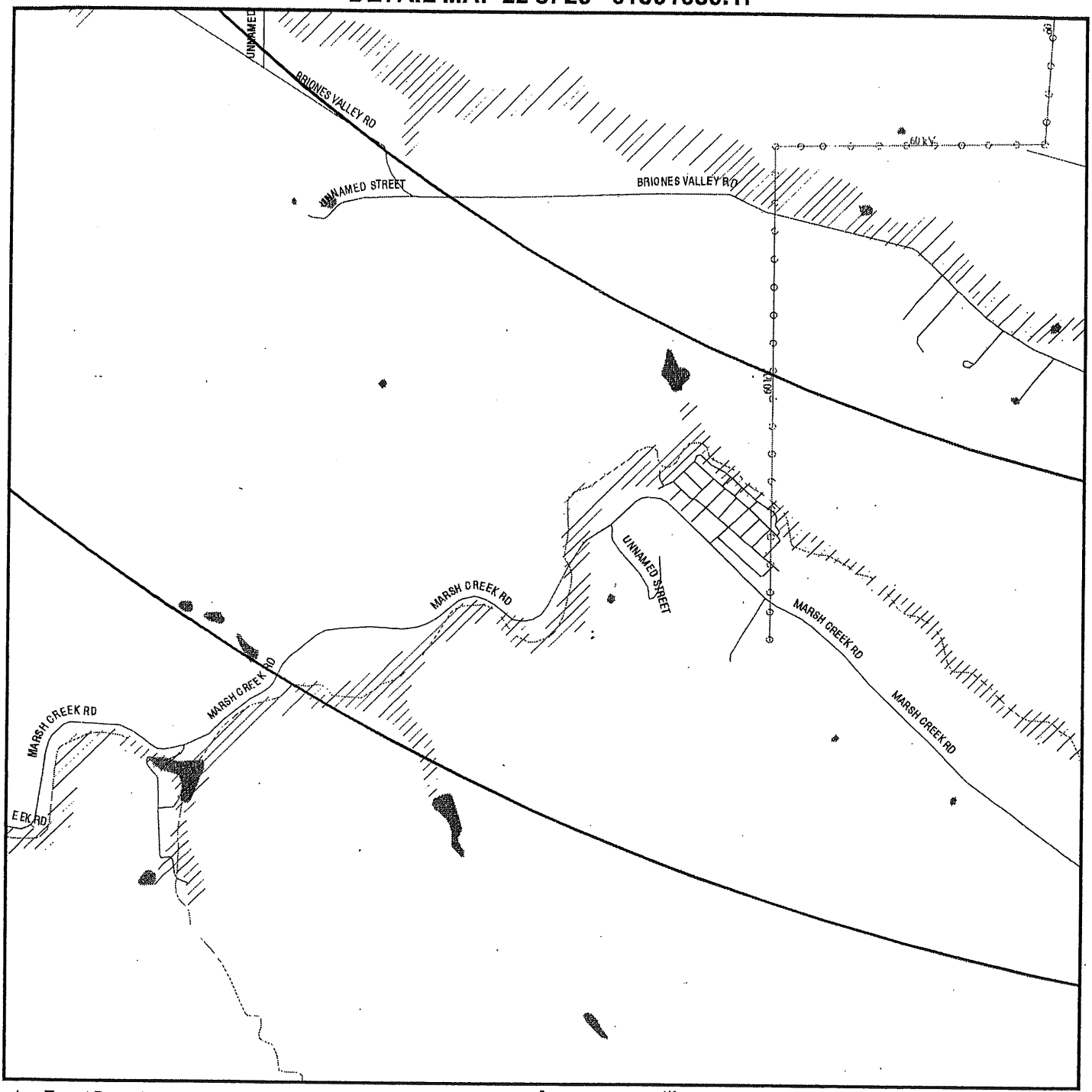
0 1/4 1/2 1 Miles

- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Coal Gasification Sites
- Sensitive Receptors
- National Priority List Sites
- Landfill Sites
- Dept. Defense Sites
- Indian Reservations BIA
- County Boundary
- Power transmission lines
- Oil & Gas pipelines
- 100-year flood zone
- 500-year flood zone
- Federal Wetlands
- Areas of Concern

TARGET PROPERTY:	Williamson Property	CUSTOMER:	Ingram Mason & Fairbairn
ADDRESS:	Prewett Ranch Rd/Hillcrest Ave	CONTACT:	Fred Serafin
CITY/STATE/ZIP:	Antioch CA 94531	INQUIRY #:	01301680.1r
LAT/LONG:	37.9516 / 121.7629	DATE:	November 05, 2004 9:01 am

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DETAIL MAP 22 of 25 - 01301680.1r



- ★ Target Property
- ▲ Sites at elevations higher than or equal to the target property
- ♦ Sites at elevations lower than the target property
- Coal Gasification Sites
- Sensitive Receptors
- National Priority List Sites
- Landfill Sites
- Dept. Defense Sites
- Indian Reservations BIA
- County Boundary
- Power transmission lines
- Oil & Gas pipelines
- 100-year flood zone
- 500-year flood zone
- Federal Wetlands
- Areas of Concern

0 1/4 1/2 1 Miles

N

TARGET PROPERTY:	Williamson Property	CUSTOMER:	Ingram Mason & Fairbairn
ADDRESS:	Prewett Ranch Rd/Hillcrest Ave	CONTACT:	Fred Serafin
CITY/STATE/ZIP:	Antioch CA 94531	INQUIRY #:	01301680.1r
LAT/LONG:	37.9516 / 121.7629	DATE:	November 05, 2004 9:01 am

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DETAIL MAP 23 of 25 - 01301680.1r



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Coal Gasification Sites
- Sensitive Receptors
- National Priority List Sites
- Landfill Sites
- Dept. Defense Sites

0 1/4 1/2 1 Miles

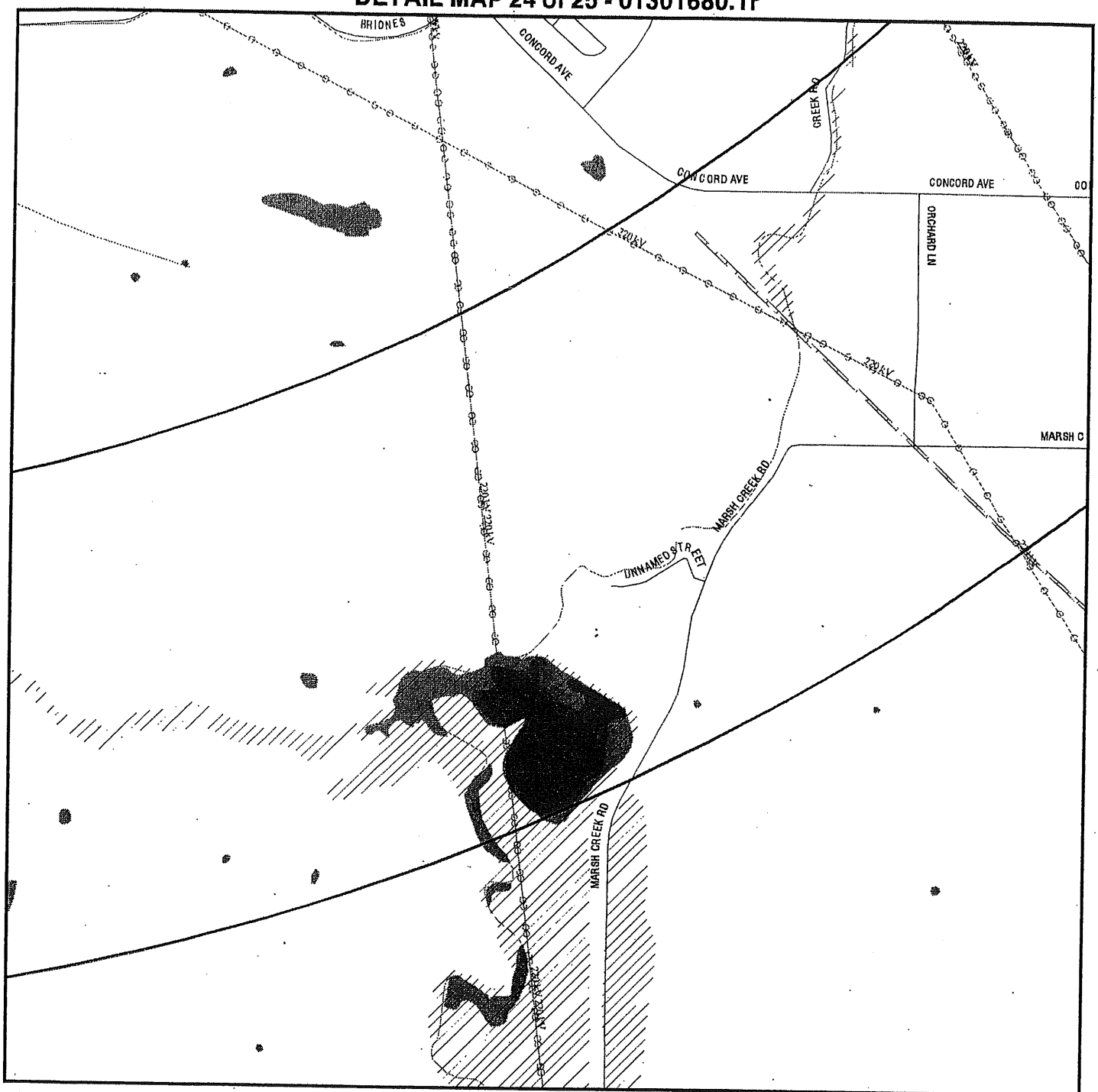
- Indian Reservations BIA
- County Boundary
- Power transmission lines
- Oil & Gas pipelines
- 100-year flood zone
- 500-year flood zone
- Federal Wetlands
- Areas of Concern

N

TARGET PROPERTY:	Williamson Property	CUSTOMER:	Ingram Mason & Fairbairn
ADDRESS:	Prewett Ranch Rd/Hillcrest Ave	CONTACT:	Fred Serafin
CITY/STATE/ZIP:	Antioch CA 94531	INQUIRY #:	01301680.1r
LAT/LONG:	37.9516 / 121.7629	DATE:	November 05, 2004 9:01 am

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DETAIL MAP 24 of 25 - 01301680.1r

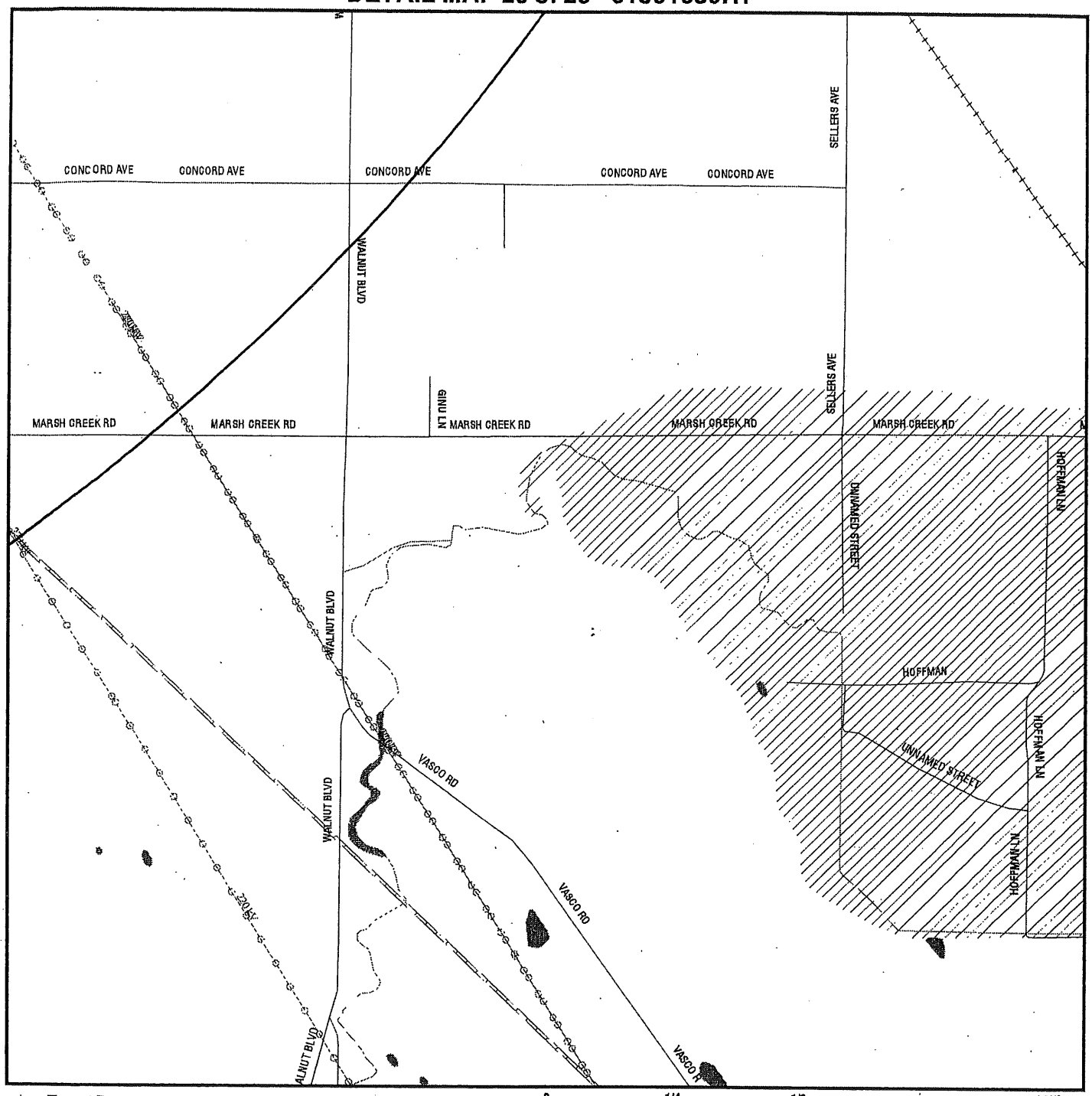


- ★ Target Property
- ▲ Sites at elevations higher than or equal to the target property
- ◆ Sites at elevations lower than the target property
- Coal Gasification Sites
- Sensitive Receptors
- National Priority List Sites
- Landfill Sites
- Dept. Defense Sites
- Indian Reservations BIA
- County Boundary
- Power transmission lines
- Oil & Gas pipelines
- 100-year flood zone
- 500-year flood zone
- Federal Wetlands
- Areas of Concern

TARGET PROPERTY:	Williamson Property	CUSTOMER:	Ingram Mason & Fairbairn
ADDRESS:	Prewett Ranch Rd/Hillcrest Ave	CONTACT:	Fred Serafin
CITY/STATE/ZIP:	Antioch CA 94531	INQUIRY #:	01301680.1r
LAT/LONG:	37.9516 / 121.7629	DATE:	November 05, 2004 9:01 am

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DETAIL MAP 25 of 25 - 01301680.1r



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Coal Gasification Sites
- Sensitive Receptors
- National Priority List Sites
- Landfill Sites
- Dept. Defense Sites
- Indian Reservations BIA
- County Boundary
- Power transmission lines
- Oil & Gas pipelines
- 100-year flood zone
- 500-year flood zone
- Federal Wetlands
- Areas of Concern

TARGET PROPERTY:	Williamson Property	CUSTOMER:	Ingram Mason & Fairbairn
ADDRESS:	Prewett Ranch Rd/Hillcrest Ave	CONTACT:	Fred Serafin
CITY/STATE/ZIP:	Antioch CA 94531	INQUIRY #:	01301680.1r
LAT/LONG:	37.9516 / 121.7629	DATE:	November 05, 2004 9:02 am

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MAP FINDINGS SUMMARY

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
FEDERAL ASTM STANDARD								
NPL		5.000	0	0	0	0	0	0
Proposed NPL		1.000	0	0	0	0	NR	0
CERCLIS		5.000	0	0	0	0	1	1
CERC-NFRAP		0.250	0	0	NR	NR	NR	0
CORRACTS		1.000	0	0	0	0	NR	0
RCRIS-TSD		0.500	0	0	0	NR	NR	0
RCRIS Lg. Quan. Gen.		0.250	0	0	NR	NR	NR	0
RCRIS Sm. Quan. Gen.		0.250	0	0	NR	NR	NR	0
ERNS		TP	NR	NR	NR	NR	NR	0
STATE ASTM STANDARD								
AWP		1.000	0	0	0	0	NR	0
Cal-Sites		1.000	0	0	0	0	NR	0
CHMIRS		TP	NR	NR	NR	NR	NR	0
Cortese		0.500	0	0	0	NR	NR	0
Notify 65		1.000	0	0	0	0	NR	0
Toxic Pits		1.000	0	0	0	0	NR	0
State Landfill		0.500	0	0	0	NR	NR	0
WMUDS/SWAT		0.500	0	0	0	NR	NR	0
LUST		0.500	0	0	0	NR	NR	0
CA Bond Exp. Plan		1.000	0	0	0	0	NR	0
UST		0.250	0	0	NR	NR	NR	0
VCP		0.500	0	0	0	NR	NR	0
INDIAN LUST		0.500	0	0	0	NR	NR	0
INDIAN UST		0.250	0	0	NR	NR	NR	0
CA FID UST		0.250	0	0	NR	NR	NR	0
HIST UST		0.250	0	0	NR	NR	NR	0
FEDERAL ASTM SUPPLEMENTAL								
CONSENT		1.000	0	0	0	0	NR	0
ROD		1.000	0	0	0	0	NR	0
Delisted NPL		1.000	0	0	0	0	NR	0
FINDS		TP	NR	NR	NR	NR	NR	0
HMIRS		TP	NR	NR	NR	NR	NR	0
MLTS		TP	NR	NR	NR	NR	NR	0
MINES		0.250	0	0	NR	NR	NR	0
NPL Liens		TP	NR	NR	NR	NR	NR	0
PADS		TP	NR	NR	NR	NR	NR	0
DOD		1.000	0	0	0	0	NR	0
INDIAN RESERV		1.000	0	0	0	0	NR	0
UMTRA		0.500	0	0	0	NR	NR	0
ODI		0.500	0	0	0	NR	NR	0
FUDS		1.000	0	0	0	0	NR	0
RAATS		TP	NR	NR	NR	NR	NR	0
TRIS		TP	NR	NR	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
TSCA		TP	NR	NR	NR	NR	NR	0
SSTS		TP	NR	NR	NR	NR	NR	0
FTTS		TP	NR	NR	NR	NR	NR	0
STATE OR LOCAL ASTM SUPPLEMENTAL								
AST		TP	NR	NR	NR	NR	NR	0
CLEANERS		0.250	0	0	NR	NR	NR	0
CA WDS		TP	NR	NR	NR	NR	NR	0
DEED		TP	NR	NR	NR	NR	NR	0
NFE		0.250	0	0	NR	NR	NR	0
NFA		0.250	0	0	NR	NR	NR	0
EMI		1.000	0	0	0	1	NR	1
REF		0.250	0	0	NR	NR	NR	0
SCH		0.250	0	0	NR	NR	NR	0
SLIC		0.500	0	0	0	NR	NR	0
HAZNET		TP	NR	NR	NR	NR	NR	0
Contra Costa Co. Site List		0.250	0	0	NR	NR	NR	0
EDR PROPRIETARY HISTORICAL DATABASES								
Coal Gas		1.000	0	0	0	0	NR	0
BROWNFIELDS DATABASES								
US BROWNFIELDS		0.500	0	0	0	NR	NR	0
VCP		0.500	0	0	0	NR	NR	0

NOTES:

AQUIFLOW - see EDR Physical Setting Source Addendum

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

Coal Gas Site Search: No site was found in a search of Real Property Scan's ENVIROHAZ database.

1
NNE
1/2-1
4052 ft.

HILLCREST CLEANERS
4361 HILLCREST AVE
ANTIOCH, CA 94509

FINDS **1004440545**
HAZNET **110002428123**
CONTRA COSTA CO. SITE LIST
CLEANERS
EMI

Relative:
Lower

Actual:
140 ft.

FINDS:
Other Pertinent Environmental Activity Identified at Site:
National Emissions Inventory

CA Cleaners:
Inactive Date: Not reported
EPA Id: CAL000056810
Facility Address 2 Not reported
NAICS Code : 81232
Facility Active : Yes
Mail Name : Not reported
Mailing Address: 4361 HILLCREST AVE
ANTIOCH, CA 94509
Owner Name : BETTY SHAW
Mailing Address: 910 FLYING FISH ST
FOSTER CITY, CA 94404
Owner Telephone 6503494644
Contact Name : BETTY SHAW
Mailing Address: 4361 HILLCREST AVE
ANTIOCH, CA 94509
Contact Telephone 9257061157
Contact Fax : Not reported
Contact Email : Not reported
Region Code : 2

Inactive Date: Not reported
EPA Id: CAL000056810
Facility Address 2 Not reported
NAICS Code : 81232
Facility Active : Yes
Mail Name : Not reported
Mailing Address: 4361 HILLCREST AVE
ANTIOCH, CA 94509
Owner Name : BETTY SHAW
Mailing Address: 910 FLYING FISH ST
FOSTER CITY, CA 94404
Owner Telephone 6503494644
Contact Name : BETTY SHAW
Mailing Address: 4361 HILLCREST AVE
ANTIOCH, CA 94509
Contact Telephone 9257061157
Contact Fax : Not reported
Contact Email : Not reported
Region Code : 2

Inactive Date: Not reported
EPA Id: CAL000056810
Facility Address 2 Not reported
NAICS Code : 81232
Facility Active : Yes

HILLCREST CLEANERS (Continued) **1004440545**

Mail Name : Not reported
Mailing Address: 4361 HILLCREST AVE
ANTIOCH, CA 94509
Owner Name : BETTY SHAW
Mailing Address: 910 FLYING FISH ST
FOSTER CITY, CA 94404
Owner Telephone 6503494644
Contact Name : BETTY SHAW
Mailing Address: 4361 HILLCREST AVE
ANTIOCH, CA 94509
Contact Telephone 9257061157
Contact Fax : Not reported
Contact Email : Not reported
Region Code : 2

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EPA Id: CAL000056810
Facility Address 2 Not reported
NAICS Code : 81232
Facility Active : Yes
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ANTIOCH, CA 94509
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FOSTER CITY, CA 94404
Owner Telephone 6503494644
Contact Name : BETTY SHAW
Mailing Address: 4361 HILLCREST AVE
ANTIOCH, CA 94509
Contact Telephone 9257061157
Contact Fax : Not reported
Contact Email : Not reported
Region Code : 2

HAZNET:
Gepaid: CAL000056810
TSD EPA ID: CAD053044053
Gen County: 7
Tsd County: 1
Tons: .6330
Waste Category: Liquids with halogenated organic compounds > 1000 mg/l
Disposal Method: Transfer Station
Contact: BETTY SHAW
Telephone: (925) 778-7112
Mailing Address: 4361 HILLCREST AVE
ANTIOCH, CA 94509 - 8225
County 7

Gepaid: CAL000056810
TSD EPA ID: CA0000084517
Gen County: 7
Tsd County: Sacramento
Tons: .5850
Waste Category: Liquids with halogenated organic compounds > 1000 mg/l
Disposal Method: Transfer Station
Contact: BETTY SHAW
Telephone: (925) 778-7112

Date of Government Version: 07/01/95
Date Made Active at EDR: 09/26/95
Database Release Frequency: No Update Planned

Date of Data Arrival at EDR: 08/30/95
Elapsed ASTM days: 27
Date of Last EDR Contact: 11/01/04

SWF/LF (SWIS): Solid Waste Information System
Source: Integrated Waste Management Board
Telephone: 916-341-6320
Active, Closed and Inactive Landfills. SWF/LF records typically contain an inve ntory of solid waste disposal facilities or landfills. These may be active or i nactive facilities or open dumps that failed to meet RCRA Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 09/13/04
Date Made Active at EDR: 10/12/04
Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 09/14/04
Elapsed ASTM days: 28
Date of Last EDR Contact: 09/14/04

WMUDS/SWAT: Waste Management Unit Database
Source: State Water Resources Control Board
Telephone: 916-227-4448
Waste Management Unit Database System. WMUDS is used by the State Water Resources Control Board staff and the Regional Water Quality Control Boards for program tracking and inventory of waste management units. WMUDS is composed of the following databases: Facility Information, Scheduled Inspections Information, Waste Management Unit Information, SWAT Program Information, SWAT Report Summary Information, SWAT Report Summary Data, Chapter 15 (formerly Subchapter 15) Information, Chapter 15 Monitoring Parameters, TPCA Program Information, RCRA Program Information, Closure Information, and Interested Parties Information.

Date of Government Version: 04/01/00
Date Made Active at EDR: 05/10/00
Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 04/10/00
Elapsed ASTM days: 30
Date of Last EDR Contact: 09/08/04

LUST: Leaking Underground Storage Tank Information System
Source: State Water Resources Control Board
Telephone: 916-341-5752
Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state.

Date of Government Version: 10/13/04
Date Made Active at EDR: 11/03/04
Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 10/13/04
Elapsed ASTM days: 21
Date of Last EDR Contact: 10/13/04

CA BOND EXP. PLAN: Bond Expenditure Plan
Source: Department of Health Services
Telephone: 916-255-2118
Department of Health Services developed a site-specific expenditure plan as the basis for an appropriation of Hazardous Substance Cleanup Bond Act funds. It is not updated.

Date of Government Version: 01/01/89
Date Made Active at EDR: 08/02/94
Database Release Frequency: No Update Planned

Date of Data Arrival at EDR: 07/27/94
Elapsed ASTM days: 6
Date of Last EDR Contact: 05/31/94

CA UST:

UST: Active UST Facilities
Source: SWRCB
Telephone: 916-341-5752
Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 10/13/04
Date Made Active at EDR: 11/03/04
Database Release Frequency: Semi-Annually

Date of Data Arrival at EDR: 10/13/04
Elapsed ASTM days: 21
Date of Last EDR Contact: 10/13/04

VCP: Voluntary Cleanup Program Properties
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

Date of Government Version: 10/05/04
Date Made Active at EDR: 11/03/04
Database Release Frequency: Quarterly
Date of Data Arrival at EDR: 10/15/04
Elapsed ASTM days: 19
Date of Last EDR Contact: 09/16/04

INDIAN LUST: Leaking Underground Storage Tanks on Indian Land
Source: Environmental Protection Agency
Telephone: 415-972-3372
LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 10/03/04
Date Made Active at EDR: 11/03/04
Database Release Frequency: Varies
Date of Data Arrival at EDR: 10/06/04
Elapsed ASTM days: 28
Date of Last EDR Contact: 08/23/04

INDIAN LUST: Leaking Underground Storage Tanks on Indian Land
Source: EPA Region 10
Telephone: 206-553-2857
LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 09/29/04
Date Made Active at EDR: 10/22/04
Database Release Frequency: Varies
Date of Data Arrival at EDR: 10/01/04
Elapsed ASTM days: 21
Date of Last EDR Contact: 08/23/04

INDIAN UST: Underground Storage Tanks on Indian Land
Source: EPA Region 9
Telephone: 415-972-3368

Date of Government Version: 06/18/04
Date Made Active at EDR: 07/26/04
Database Release Frequency: Varies
Date of Data Arrival at EDR: 06/21/04
Elapsed ASTM days: 35
Date of Last EDR Contact: 08/23/04

CA FID UST: Facility Inventory Database
Source: California Environmental Protection Agency
Telephone: 916-445-6532
The Facility Inventory Database (FID) contains a historical listing of active and inactive underground storage tank locations from the State Water Resource Control Board. Refer to local/county source for current data.

Date of Government Version: 10/31/94
Date Made Active at EDR: 09/29/95
Database Release Frequency: No Update Planned
Date of Data Arrival at EDR: 09/05/95
Elapsed ASTM days: 24
Date of Last EDR Contact: 12/28/98

HIST UST: Hazardous Substance Storage Container Database
Source: State Water Resources Control Board
Telephone: 916-341-5700
The Hazardous Substance Storage Container Database is a historical listing of UST sites. Refer to local/county source for current data.

Date of Government Version: 10/15/90
Date Made Active at EDR: 02/12/91
Database Release Frequency: No Update Planned
Date of Data Arrival at EDR: 01/25/91
Elapsed ASTM days: 18
Date of Last EDR Contact: 07/26/01

STATE OF CALIFORNIA ASTM SUPPLEMENTAL RECORDS

AST: Aboveground Petroleum Storage Tank Facilities
Source: State Water Resources Control Board
Telephone: 916-341-5712
Registered Aboveground Storage Tanks.

Date of Government Version: 12/01/03
Database Release Frequency: Quarterly

Date of Last EDR Contact: 11/01/04
Date of Next Scheduled EDR Contact: 01/31/05

CLEANERS: Cleaner Facilities
Source: Department of Toxic Substance Control
Telephone: 916-225-0873
A list of drycleaner related facilities that have EPA ID numbers. These are facilities with certain SIC codes: power laundries, family and commercial; garment pressing and cleaner's agents; linen supply; coin-operated laundries and cleaning; drycleaning plants, except rugs; carpet and upholster cleaning; industrial launderers; laundry and garment services.

Date of Government Version: 04/21/04
Database Release Frequency: Annually

Date of Last EDR Contact: 11/01/04
Date of Next Scheduled EDR Contact: 01/03/05

CA WDS: Waste Discharge System
Source: State Water Resources Control Board
Telephone: 916-341-5227
Sites which have been issued waste discharge requirements.

Date of Government Version: 06/18/04
Database Release Frequency: Quarterly

Date of Last EDR Contact: 09/21/04
Date of Next Scheduled EDR Contact: 12/20/04

DEED: List of Deed Restrictions
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
The use of recorded land use restrictions is one of the methods the DTSC uses to protect the public from unsafe exposures to hazardous substances and wastes.

Date of Government Version: 10/04/04
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 10/04/04
Date of Next Scheduled EDR Contact: 01/03/05

NFA: No Further Action Determination
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
This category contains properties at which DTSC has made a clear determination that the property does not pose a problem to the environment or to public health.

Date of Government Version: 06/01/04
Database Release Frequency: Quarterly

Date of Last EDR Contact: 09/16/04
Date of Next Scheduled EDR Contact: 11/29/04

EMI: Emissions Inventory Data
Source: California Air Resources Board
Telephone: 916-322-2990
Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies.

Date of Government Version: 12/31/02
Database Release Frequency: Varies

Date of Last EDR Contact: 10/22/04
Date of Next Scheduled EDR Contact: 01/17/05

REF: Unconfirmed Properties Referred to Another Agency
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
This category contains properties where contamination has not been confirmed and which were determined as not requiring direct DTSC Site Mitigation Program action or oversight. Accordingly, these sites have been referred to another state or local regulatory agency.

Date of Government Version: 10/05/04
Database Release Frequency: Quarterly

Date of Last EDR Contact: 09/16/04
Date of Next Scheduled EDR Contact: 11/29/04

SCH: School Property Evaluation Program
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
This category contains proposed and existing school sites that are being evaluated by DTSC for possible hazardous materials contamination. In some cases, these properties may be listed in the CalSites category depending on the level of threat to public health and safety or the environment they pose.

Date of Government Version: 10/05/04
Database Release Frequency: Quarterly

Date of Last EDR Contact: 09/16/04
Date of Next Scheduled EDR Contact: 11/29/04

NFE: Properties Needing Further Evaluation
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
This category contains properties that are suspected of being contaminated. These are unconfirmed contaminated properties that need to be assessed using the PEA process. PEA in Progress indicates properties where DTSC is currently conducting a PEA. PEA Required indicates properties where DTSC has determined a PEA is required, but not currently underway.

Date of Government Version: 10/05/04
Database Release Frequency: Quarterly

Date of Last EDR Contact: 09/16/04
Date of Next Scheduled EDR Contact: 11/29/04

SLIC: Statewide SLIC Cases
Source: State Water Resources Control Board
Telephone: 916-341-5752
The Spills, Leaks, Investigations, and Cleanups (SLIC) listings includes unauthorized discharges from spills and leaks, other than from underground storage tanks or other regulated sites.

Date of Government Version: 10/13/04
Database Release Frequency: Varies

Date of Last EDR Contact: 10/13/04
Date of Next Scheduled EDR Contact: 01/10/05

HAZNET: Facility and Manifest Data
Source: California Environmental Protection Agency
Telephone: 916-255-1136
Facility and Manifest Data. The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000 - 1,000,000 annually, representing approximately 350,000 - 500,000 shipments. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, and disposal method.

Date of Government Version: 12/31/02
Database Release Frequency: Annually

Date of Last EDR Contact: 08/09/04
Date of Next Scheduled EDR Contact: 11/08/04

LOCAL RECORDS

ALAMEDA COUNTY:

Local Oversight Program Listing of UGT Cleanup Sites
Source: Alameda County Environmental Health Services
Telephone: 510-567-6700

Date of Government Version: 08/17/04
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 10/25/04
Date of Next Scheduled EDR Contact: 01/24/05

Underground Tanks
Source: Alameda County Environmental Health Services
Telephone: 510-567-6700

Date of Government Version: 08/17/04
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 10/25/04
Date of Next Scheduled EDR Contact: 01/24/05

CONTRA COSTA COUNTY:

Site List
Source: Contra Costa Health Services Department
Telephone: 925-646-2286
List includes sites from the underground tank, hazardous waste generator and business plan/2185 programs.

Date of Government Version: 08/30/04
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 08/30/04
Date of Next Scheduled EDR Contact: 11/29/04

FRESNO COUNTY:

CUPA Resources List
Source: Dept. of Community Health
Telephone: 559-445-3271
Certified Unified Program Agency. CUPA's are responsible for implementing a unified hazardous materials and hazardous waste management regulatory program. The agency provides oversight of businesses that deal with hazardous materials, operate underground storage tanks or aboveground storage tanks.

Date of Government Version: 07/21/04
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 08/09/04
Date of Next Scheduled EDR Contact: 11/08/04

KERN COUNTY:

Underground Storage Tank Sites & Tank Listing
Source: Kern County Environment Health Services Department
Telephone: 661-862-8700
Kern County Sites and Tanks Listing.

Date of Government Version: 09/14/04
Database Release Frequency: Quarterly

Date of Last EDR Contact: 09/07/04
Date of Next Scheduled EDR Contact: 12/06/04

LOS ANGELES COUNTY:

List of Solid Waste Facilities
Source: La County Department of Public Works
Telephone: 818-458-5185

Date of Government Version: 06/03/03
Database Release Frequency: Varies

Date of Last EDR Contact: 08/19/04
Date of Next Scheduled EDR Contact: 11/15/04

City of El Segundo Underground Storage Tank
Source: City of El Segundo Fire Department
Telephone: 310-524-2236

Date of Government Version: 09/07/04
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 08/30/04
Date of Next Scheduled EDR Contact: 11/15/04

City of Long Beach Underground Storage Tank
Source: City of Long Beach Fire Department
Telephone: 562-570-2543

Date of Government Version: 03/28/03
Database Release Frequency: Annually
Date of Last EDR Contact: 08/27/04
Date of Next Scheduled EDR Contact: 11/22/04

City of Torrance Underground Storage Tank
Source: City of Torrance Fire Department
Telephone: 310-618-2973

Date of Government Version: 08/16/04
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 06/16/04
Date of Next Scheduled EDR Contact: 11/15/04

City of Los Angeles Landfills
Source: Engineering & Construction Division
Telephone: 213-473-7869

Date of Government Version: 03/01/04
Database Release Frequency: Varies
Date of Last EDR Contact: 09/14/04
Date of Next Scheduled EDR Contact: 12/13/04

HMS: Street Number List
Source: Department of Public Works
Telephone: 626-458-3517
Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 04/29/04
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 08/16/04
Date of Next Scheduled EDR Contact: 11/15/04

Site Mitigation List
Source: Community Health Services
Telephone: 323-890-7806
Industrial sites that have had some sort of spill or complaint.

Date of Government Version: 02/26/04
Database Release Frequency: Annually
Date of Last EDR Contact: 08/16/04
Date of Next Scheduled EDR Contact: 11/15/04

San Gabriel Valley Areas of Concern
Source: EPA Region 9
Telephone: 415-972-3178
San Gabriel Valley areas where VOC contamination is at or above the MCL as designated by region 9 EPA office.

Date of Government Version: 12/31/98
Database Release Frequency: No Update Planned
Date of Last EDR Contact: 07/06/99
Date of Next Scheduled EDR Contact: N/A

MARIN COUNTY:

Underground Storage Tank Sites
Source: Public Works Department Waste Management
Telephone: 415-499-6647
Currently permitted USTs in Marin County.

Date of Government Version: 08/18/04
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 11/01/04
Date of Next Scheduled EDR Contact: 01/31/05

NAPA COUNTY:

Sites With Reported Contamination
Source: Napa County Department of Environmental Management
Telephone: 707-253-4269

Date of Government Version: 09/29/04
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 09/27/04
Date of Next Scheduled EDR Contact: 12/27/04

Closed and Operating Underground Storage Tank Sites
Source: Napa County Department of Environmental Management
Telephone: 707-253-4269

Date of Government Version: 09/29/04
Database Release Frequency: Annually

Date of Last EDR Contact: 09/27/04
Date of Next Scheduled EDR Contact: 12/27/04

ORANGE COUNTY:

List of Underground Storage Tank Cleanups
Source: Health Care Agency
Telephone: 714-834-3446
Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 06/01/04
Database Release Frequency: Quarterly

Date of Last EDR Contact: 09/09/04
Date of Next Scheduled EDR Contact: 12/06/04

List of Underground Storage Tank Facilities
Source: Health Care Agency
Telephone: 714-834-3446
Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 09/01/04
Database Release Frequency: Quarterly

Date of Last EDR Contact: 09/09/04
Date of Next Scheduled EDR Contact: 12/06/04

List of Industrial Site Cleanups
Source: Health Care Agency
Telephone: 714-834-3446
Petroleum and non-petroleum spills.

Date of Government Version: 09/01/04
Database Release Frequency: Annually

Date of Last EDR Contact: 09/09/04
Date of Next Scheduled EDR Contact: 12/06/04

PLACER COUNTY:

Master List of Facilities
Source: Placer County Health and Human Services
Telephone: 530-889-7312
List includes aboveground tanks, underground tanks and cleanup sites.

Date of Government Version: 10/04/04
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 09/20/04
Date of Next Scheduled EDR Contact: 12/20/04

RIVERSIDE COUNTY:

Listing of Underground Tank Cleanup Sites
Source: Department of Public Health
Telephone: 909-358-5055
Riverside County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 06/21/04
Database Release Frequency: Quarterly

Date of Last EDR Contact: 10/18/04
Date of Next Scheduled EDR Contact: 01/17/05

Underground Storage Tank Tank List
Source: Health Services Agency
Telephone: 909-358-5055

Date of Government Version: 06/21/04
Database Release Frequency: Quarterly

Date of Last EDR Contact: 10/18/04
Date of Next Scheduled EDR Contact: 01/17/05

SACRAMENTO COUNTY:

CS - Contaminated Sites
Source: Sacramento County Environmental Management
Telephone: 916-875-8406

Date of Government Version: 04/16/04
Database Release Frequency: Quarterly

Date of Last EDR Contact: 10/13/04
Date of Next Scheduled EDR Contact: 01/31/05

ML - Regulatory Compliance Master List
Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Any business that has hazardous materials on site - hazardous material storage sites, underground storage tanks, waste generators.

Date of Government Version: 09/02/04
Database Release Frequency: Quarterly

Date of Last EDR Contact: 11/02/04
Date of Next Scheduled EDR Contact: 01/31/05

SAN BERNARDINO COUNTY:

Hazardous Material Permits
Source: San Bernardino County Fire Department Hazardous Materials Division
Telephone: 909-387-3041
This listing includes underground storage tanks, medical waste handlers/generators, hazardous materials handlers, hazardous waste generators, and waste oil generators/handlers.

Date of Government Version: 09/17/04
Database Release Frequency: Quarterly

Date of Last EDR Contact: 09/07/04
Date of Next Scheduled EDR Contact: 12/06/04

SAN DIEGO COUNTY:

Solid Waste Facilities
Source: Department of Health Services
Telephone: 619-338-2209
San Diego County Solid Waste Facilities.

Date of Government Version: 08/01/00
Database Release Frequency: Varies

Date of Last EDR Contact: 08/23/04
Date of Next Scheduled EDR Contact: 11/22/04

Hazardous Materials Management Division Database
Source: Hazardous Materials Management Division
Telephone: 619-338-2268
The database includes: HE58 - This report contains the business name, site address, business phone number, establishment 'H' permit number, type of permit, and the business status. HE17 - In addition to providing the same information provided in the HE58 listing, HE17 provides inspection dates, violations received by the establishment, hazardous waste generated, the quantity, method of storage, treatment/disposal of waste and the hauler, and information on underground storage tanks. Unauthorized Release List - Includes a summary of environmental contamination cases in San Diego County (underground tank cases, non-tank cases, groundwater contamination, and soil contamination are included.)

Date of Government Version: 06/29/04
Database Release Frequency: Quarterly

Date of Last EDR Contact: 10/08/04
Date of Next Scheduled EDR Contact: 01/03/05

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

SAN FRANCISCO COUNTY:

Local Oversite Facilities
Source: Department Of Public Health San Francisco County
Telephone: 415-252-3920

Date of Government Version: 09/15/04
Database Release Frequency: Quarterly

Date of Last EDR Contact: 09/20/04
Date of Next Scheduled EDR Contact: 12/06/04

Underground Storage Tank Information
Source: Department of Public Health
Telephone: 415-252-3920

Date of Government Version: 09/15/04
Database Release Frequency: Quarterly

Date of Last EDR Contact: 09/20/04
Date of Next Scheduled EDR Contact: 12/26/04

SAN MATEO COUNTY:

Fuel Leak List
Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921

Date of Government Version: 08/03/04
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 10/12/04
Date of Next Scheduled EDR Contact: 01/10/05

Business Inventory
Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
List includes Hazardous Materials Business Plan, hazardous waste generators, and underground storage tanks.

Date of Government Version: 08/19/04
Database Release Frequency: Annually

Date of Last EDR Contact: 10/12/04
Date of Next Scheduled EDR Contact: 01/10/05

SANTA CLARA COUNTY:

Fuel Leak Site Activity Report
Source: Santa Clara Valley Water District
Telephone: 408-265-2600

Date of Government Version: 06/30/04
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 09/27/04
Date of Next Scheduled EDR Contact: 12/27/04

Hazardous Material Facilities
Source: City of San Jose Fire Department
Telephone: 408-277-4659

Date of Government Version: 10/01/03
Database Release Frequency: Annually

Date of Last EDR Contact: 09/07/04
Date of Next Scheduled EDR Contact: 12/06/04

SOLANO COUNTY:

Leaking Underground Storage Tanks
Source: Solano County Department of Environmental Management
Telephone: 707-421-6770

Date of Government Version: 09/20/04
Database Release Frequency: Quarterly

Date of Last EDR Contact: 09/13/04
Date of Next Scheduled EDR Contact: 12/13/04

Underground Storage Tanks
Source: Solano County Department of Environmental Management
Telephone: 707-421-6770

Date of Government Version: 09/20/04
Database Release Frequency: Quarterly

Date of Last EDR Contact: 09/13/04
Date of Next Scheduled EDR Contact: 12/13/04

SONOMA COUNTY:

Leaking Underground Storage Tank Sites
Source: Department of Health Services
Telephone: 707-565-6565

Date of Government Version: 07/26/04
Database Release Frequency: Quarterly

Date of Last EDR Contact: 10/25/04
Date of Next Scheduled EDR Contact: 01/24/05

SUTTER COUNTY:

Underground Storage Tanks
Source: Sutter County Department of Agriculture
Telephone: 530-822-7500

Date of Government Version: 01/29/04
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 10/18/04
Date of Next Scheduled EDR Contact: 01/03/05

VENTURA COUNTY:

Inventory of Illegal Abandoned and Inactive Sites
Source: Environmental Health Division
Telephone: 805-654-2813
Ventura County Inventory of Closed, Illegal Abandoned, and Inactive Sites.

Date of Government Version: 08/01/04
Database Release Frequency: Annually

Date of Last EDR Contact: 08/25/04
Date of Next Scheduled EDR Contact: 11/22/04

Listing of Underground Tank Cleanup Sites
Source: Environmental Health Division
Telephone: 805-654-2813
Ventura County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 09/02/04
Database Release Frequency: Quarterly

Date of Last EDR Contact: 09/14/04
Date of Next Scheduled EDR Contact: 12/13/04

Underground Tank Closed Sites List
Source: Environmental Health Division
Telephone: 805-654-2813
Ventura County Operating Underground Storage Tank Sites (UST)/Underground Tank Closed Sites List.

Date of Government Version: 05/04/04
Database Release Frequency: Quarterly

Date of Last EDR Contact: 10/13/04
Date of Next Scheduled EDR Contact: 01/10/05

Business Plan, Hazardous Waste Producers, and Operating Underground Tanks
Source: Ventura County Environmental Health Division
Telephone: 805-654-2813
The BWT list indicates by site address whether the Environmental Health Division has Business Plan (B), Waste Producer (W), and/or Underground Tank (T) information.

Date of Government Version: 09/02/04
Database Release Frequency: Quarterly

Date of Last EDR Contact: 09/14/04
Date of Next Scheduled EDR Contact: 12/13/04

YOLO COUNTY:

Underground Storage Tank Comprehensive Facility Report
Source: Yolo County Department of Health
Telephone: 530-666-8646

Date of Government Version: 06/02/04
Database Release Frequency: Annually

Date of Last EDR Contact: 10/18/04
Date of Next Scheduled EDR Contact: 01/17/05

California Regional Water Quality Control Board (RWQCB) LUST Records

LUST REG 1: Active Toxic Site Investigation
Source: California Regional Water Quality Control Board North Coast (1)
Telephone: 707-576-2220
Del Norte, Humboldt, Lake, Mendocino, Modoc, Siskiyou, Sonoma, Trinity counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/01/01
Database Release Frequency: No Update Planned

Date of Last EDR Contact: 08/23/04
Date of Next Scheduled EDR Contact: 11/22/04

LUST REG 2: Fuel Leak List
Source: California Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-286-0457

Date of Government Version: 03/31/04
Database Release Frequency: Quarterly

Date of Last EDR Contact: 10/13/04
Date of Next Scheduled EDR Contact: 01/10/05

LUST REG 3: Leaking Underground Storage Tank Database
Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-549-3147

Date of Government Version: 05/19/03
Database Release Frequency: Varies

Date of Last EDR Contact: 08/17/04
Date of Next Scheduled EDR Contact: 11/15/04

LUST REG 4: Underground Storage Tank Leak List
Source: California Regional Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6600
Los Angeles, Ventura counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/07/04
Database Release Frequency: No Update Planned

Date of Last EDR Contact: 08/16/04
Date of Next Scheduled EDR Contact: 12/27/04

LUST REG 5: Leaking Underground Storage Tank Database
Source: California Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-3291

Date of Government Version: 07/01/04
Database Release Frequency: Quarterly

Date of Last EDR Contact: 10/22/04
Date of Next Scheduled EDR Contact: 01/30/05

LUST REG 6L: Leaking Underground Storage Tank Case Listing
Source: California Regional Water Quality Control Board Lahontan Region (6)
Telephone: 916-542-5424
For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/09/03
Database Release Frequency: No Update Planned

Date of Last EDR Contact: 09/08/04
Date of Next Scheduled EDR Contact: 12/06/04

LUST REG 6V: Leaking Underground Storage Tank Case Listing
Source: California Regional Water Quality Control Board Victorville Branch Office (6)
Telephone: 760-346-7491

Date of Government Version: 08/09/04
Database Release Frequency: Quarterly

Date of Last EDR Contact: 10/04/04
Date of Next Scheduled EDR Contact: 01/03/05

LUST REG 7: Leaking Underground Storage Tank Case Listing
Source: California Regional Water Quality Control Board Colorado River Basin Region (7)
Telephone: 760-346-7491

Date of Government Version: 02/26/04
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 09/27/04
Date of Next Scheduled EDR Contact: 12/27/04

LUST REG 8: Leaking Underground Storage Tanks
Source: California Regional Water Quality Control Board Santa Ana Region (8)
Telephone: 909-782-4498
California Regional Water Quality Control Board Santa Ana Region (8). For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 07/01/04
Database Release Frequency: No Update Planned

Date of Last EDR Contact: 08/09/04
Date of Next Scheduled EDR Contact: 11/08/04

LUST REG 9: Leaking Underground Storage Tank Report
Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-467-2980
Orange, Riverside, San Diego counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 03/01/01
Database Release Frequency: No Update Planned

Date of Last EDR Contact: 10/18/04
Date of Next Scheduled EDR Contact: 01/17/05

California Regional Water Quality Control Board (RWQCB) SLIC Records

SLIC REG 1: Active Toxic Site Investigations
Source: California Regional Water Quality Control Board, North Coast Region (1)
Telephone: 707-576-2220

Date of Government Version: 04/03/03
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 08/23/04
Date of Next Scheduled EDR Contact: 11/22/04

SLIC REG 2: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
Source: Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-286-0457
Any contaminated site that impacts groundwater or has the potential to impact groundwater.

Date of Government Version: 07/12/04
Database Release Frequency: Quarterly

Date of Last EDR Contact: 10/13/04
Date of Next Scheduled EDR Contact: 01/10/05

SLIC REG 3: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-549-3147
Any contaminated site that impacts groundwater or has the potential to impact groundwater.

Date of Government Version: 08/20/04
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 08/16/04
Date of Next Scheduled EDR Contact: 11/15/04

SLIC REG 4: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
Source: Region Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6600
Any contaminated site that impacts groundwater or has the potential to impact groundwater.

Date of Government Version: 07/08/04
Database Release Frequency: Quarterly

Date of Last EDR Contact: 10/25/04
Date of Next Scheduled EDR Contact: 01/24/05

SLIC REG 5: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
Source: Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-3291
Unregulated sites that impact groundwater or have the potential to impact groundwater.

Date of Government Version: 04/01/04
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 10/06/04
Date of Next Scheduled EDR Contact: 01/03/05

SLIC REG 6L: SLIC Sites
Source: California Regional Water Quality Control Board, Lahontan Region
Telephone: 530-542-5574

Date of Government Version: 09/07/04
Database Release Frequency: Varies

Date of Last EDR Contact: 09/07/04
Date of Next Scheduled EDR Contact: 12/06/04

SLIC REG 6V: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
Source: Regional Water Quality Control Board, Victorville Branch
Telephone: 619-241-6583

Date of Government Version: 04/01/04
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 10/04/04
Date of Next Scheduled EDR Contact: 01/03/05

SLIC REG 7: SLIC List
Source: California Regional Quality Control Board, Colorado River Basin Region
Telephone: 760-346-7491

Date of Government Version: 08/25/04
Database Release Frequency: Varies

Date of Last EDR Contact: 08/23/04
Date of Next Scheduled EDR Contact: 11/22/04

SLIC REG 8: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
Source: California Region Water Quality Control Board Santa Ana Region (8)
Telephone: 909-782-3298

Date of Government Version: 07/01/04
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 10/08/04
Date of Next Scheduled EDR Contact: 01/03/05

SLIC REG 9: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-467-2980

Date of Government Version: 09/10/04
Database Release Frequency: Annually

Date of Last EDR Contact: 08/30/04
Date of Next Scheduled EDR Contact: 11/29/04

EDR PROPRIETARY HISTORICAL DATABASES

Former Manufactured Gas (Coal Gas) Sites: The existence and location of Coal Gas sites is provided exclusively to EDR by Real Property Scan, Inc. ©Copyright 1993 Real Property Scan, Inc. For a technical description of the types of hazards which may be found at such sites, contact your EDR customer service representative.

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GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

BROWNFIELDS DATABASES

VCP: Voluntary Cleanup Program Properties
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

Date of Government Version: 10/05/04
Database Release Frequency: Quarterly

Date of Last EDR Contact: 09/16/04
Date of Next Scheduled EDR Contact: 11/29/04

US BROWNFIELDS: A Listing of Brownfields Sites
Source: Environmental Protection Agency
Telephone: 202-566-2777
Included in the listing are brownfields properties addresses by Cooperative Agreement Recipients and brownfields properties addressed by Targeted Brownfields Assessments. Targeted Brownfields Assessments-EPA's Targeted Brownfields Assessments (TBA) program is designed to help states, tribes, and municipalities--especially those without EPA Brownfields Assessment Demonstration Pilots--minimize the uncertainties of contamination often associated with brownfields. Under the TBA program, EPA provides funding and/or technical assistance for environmental assessments at brownfields sites throughout the country. Targeted Brownfields Assessments supplement and work with other efforts under EPA's Brownfields Initiative to promote cleanup and redevelopment of brownfields. Cooperative Agreement Recipients-States, political subdivisions, territories, and Indian tribes become BCRLF cooperative agreement recipients when they enter into BCRLF cooperative agreements with the U.S. EPA. EPA selects BCRLF cooperative agreement recipients based on a proposal and application process. BCRLF cooperative agreement recipients must use EPA funds provided through BCRLF cooperative agreement for specified brownfields-related cleanup activities.

Date of Government Version: N/A
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: N/A
Date of Next Scheduled EDR Contact: N/A

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

Oil/Gas Pipelines: This data was obtained by EDR from the USGS in 1994. It is referred to by USGS as GeoData Digital Line Graphs from 1:100,000-Scale Maps. It was extracted from the transportation category including some oil, but primarily gas pipelines.

Electric Power Transmission Line Data
Source: PennWell Corporation
Telephone: (800) 823-6277
This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:
Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing
Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.

Daycare Centers: Licensed Facilities
Source: Department of Social Services
Telephone: 916-657-4041

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 1999 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 from the U.S. Fish and Wildlife Service.

STREET AND ADDRESS INFORMATION

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GEOCHECK®- PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

WILLIAMSON PROPERTY
PREWETT RANCH RD/HILLCREST AVE
ANTIOCH, CA 94531

TARGET PROPERTY COORDINATES

Latitude (North):	37.951599 - 37° 57' 5.8"
Longitude (West):	121.762901 - 121° 45' 46.4"
Universal Tranverse Mercator:	Zone 10
UTM X (Meters):	608690.2
UTM Y (Meters):	4200961.0
Elevation:	182 ft. above sea level

EDR's GeoCheck Physical Setting Source Addendum has been developed to assist the environmental professional with the collection of physical setting source information in accordance with ASTM 1527-00, Section 7.2.3. Section 7.2.3 requires that a current USGS 7.5 Minute Topographic Map (or equivalent, such as the USGS Digital Elevation Model) be reviewed. It also requires that one or more additional physical setting sources be sought when (1) conditions have been identified in which hazardous substances or petroleum products are likely to migrate to or from the property, and (2) more information than is provided in the current USGS 7.5 Minute Topographic Map (or equivalent) is generally obtained, pursuant to local good commercial or customary practice, to assess the impact of migration of recognized environmental conditions in connection with the property. Such additional physical setting sources generally include information about the topographic, hydrologic, hydrogeologic, and geologic characteristics of a site, and wells in the area.

Assessment of the impact of contaminant migration generally has two principle investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata. EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

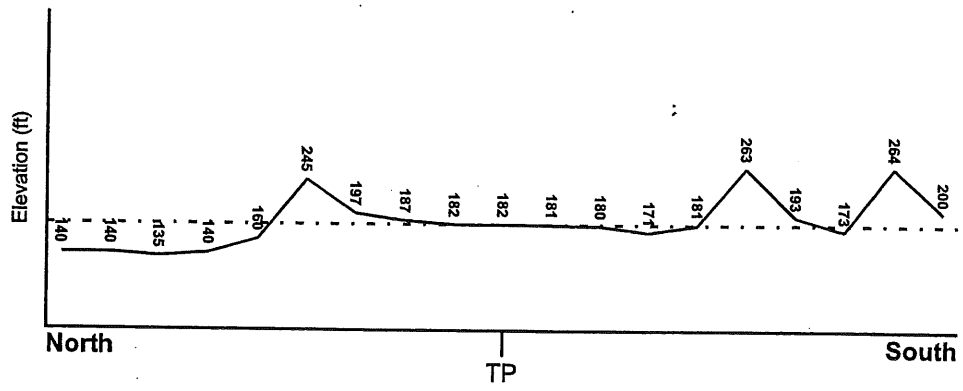
TOPOGRAPHIC INFORMATION

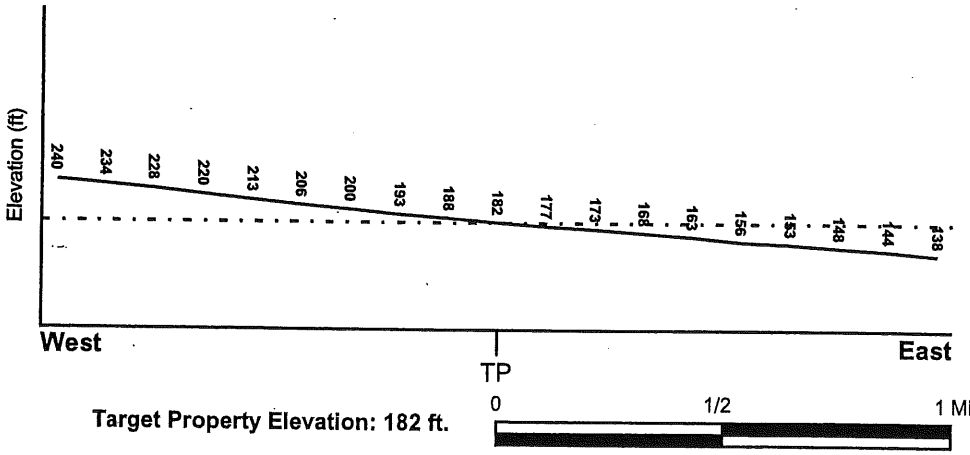
Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

USGS Topographic Map:	37121-H7 ANTIOCH SOUTH, CA
General Topographic Gradient:	General ESE
Source:	USGS 7.5 min quad index

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES





Target Property Elevation: 182 ft.

Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

Target Property County	FEMA Flood Electronic Data
CONTRA COSTA, CA	YES - refer to the Overview Map and Detail Map

Flood Plain Panel at Target Property:	0600250335B
Additional Panels in search area:	0602620670C 0600250175B 0600250145B 0600260002D 0600260003C 0600250140B 0600260001C 0600250355B 0600260004C 0600250360B 0600260005C 0600250350B 0600260006D 0604390360B 0604390355B 0600250365B 0604390365B 0600250370B 0604390370B

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
ANTIOCH SOUTH	YES - refer to the Overview Map and Detail Map

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Site-Specific Hydrogeological Data*:

Search Radius:	1.25 miles
Status:	Not found

* ©1996 Site-specific hydrogeological data gathered by CERCLIS Alerts, Inc., Bainbridge Island, WA. All rights reserved. All of the information and opinions presented are those of the cited EPA report(s), which were completed under a Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS) investigation.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

MAP ID	LOCATION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW
Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

Era:	Cenozoic
System:	Tertiary
Series:	Eocene
Code:	Te *(decoded above as Era, System & Series)*

GEOLOGIC AGE IDENTIFICATION

Category: Stratifed Sequence

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps. The following information is based on Soil Conservation Service STATSGO data.

Soil Component Name:	CAPAY
Soil Surface Texture:	clay
Hydrologic Group:	Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.
Soil Drainage Class:	Moderately well drained. Soils have a layer of low hydraulic conductivity, wet state high in the profile. Depth to water table is 3 to 6 feet.

Hydric Status: Soil does not meet the requirements for a hydric soil.

Corrosion Potential - Uncoated Steel:	HIGH
Depth to Bedrock Min:	> 60 inches
Depth to Bedrock Max:	> 60 inches

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification			
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil	Permeability Rate (in/hr)	Soil Reaction (pH)
1	0 inches	32 inches	clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.	Max: 0.20 Min: 0.06	Max: 8.40 Min: 5.60
2	32 inches	50 inches	clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 0.20 Min: 0.06	Max: 8.40 Min: 6.60
3	50 inches	62 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 0.20 Min: 0.06	Max: 8.40 Min: 6.60

OTHER SOIL TYPES IN AREA

Based on Soil Conservation Service STATSGO data, the following additional subordinant soil types may appear within the general area of target property.

Soil Surface Textures:
clay loam
silt loam
silty clay loam
sand
loam

Surficial Soil Types:
clay loam
silt loam
silty clay loam
sand
loam

Shallow Soil Types:
silty clay loam
sand
clay
stratified

Deeper Soil Types:
clay loam
stratified
gravelly - loam
sand
clay

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

ADDITIONAL ENVIRONMENTAL RECORD SOURCES

According to ASTM E 1527-00, Section 7.2.2, "one or more additional state or local sources of environmental records may be checked, in the discretion of the environmental professional, to enhance and supplement federal and state sources... Factors to consider in determining which local or additional state records, if any, should be checked include (1) whether they are reasonably ascertainable, (2) whether they are sufficiently useful, accurate, and complete in light of the objective of the records review (see 7.1.1), and (3) whether they are obtained, pursuant to local, good commercial or customary practice." One of the record sources listed in Section 7.2.2 is water well information. Water well information can be used to assist the environmental professional in assessing sources that may impact groundwater flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

WELL SEARCH DISTANCE INFORMATION

DATABASE	SEARCH DISTANCE (miles)
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile
State Database	1.000

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No Wells Found		

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No PWS System Found		

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No Wells Found		

STATE OIL/GAS WELL INFORMATION

DISTANCE FROM TP (Miles)
1/2 - 1 Mile North
1/2 - 1 Mile North
1/2 - 1 Mile NNW
1/2 - 1 Mile ENE
1/2 - 1 Mile WNW
1/4 - 1/2 Mile WNW
1/4 - 1/2 Mile WNW
1/4 - 1/2 Mile WNW
1/4 - 1/2 Mile WNW
1/4 - 1/2 Mile East
1/2 - 1 Mile East

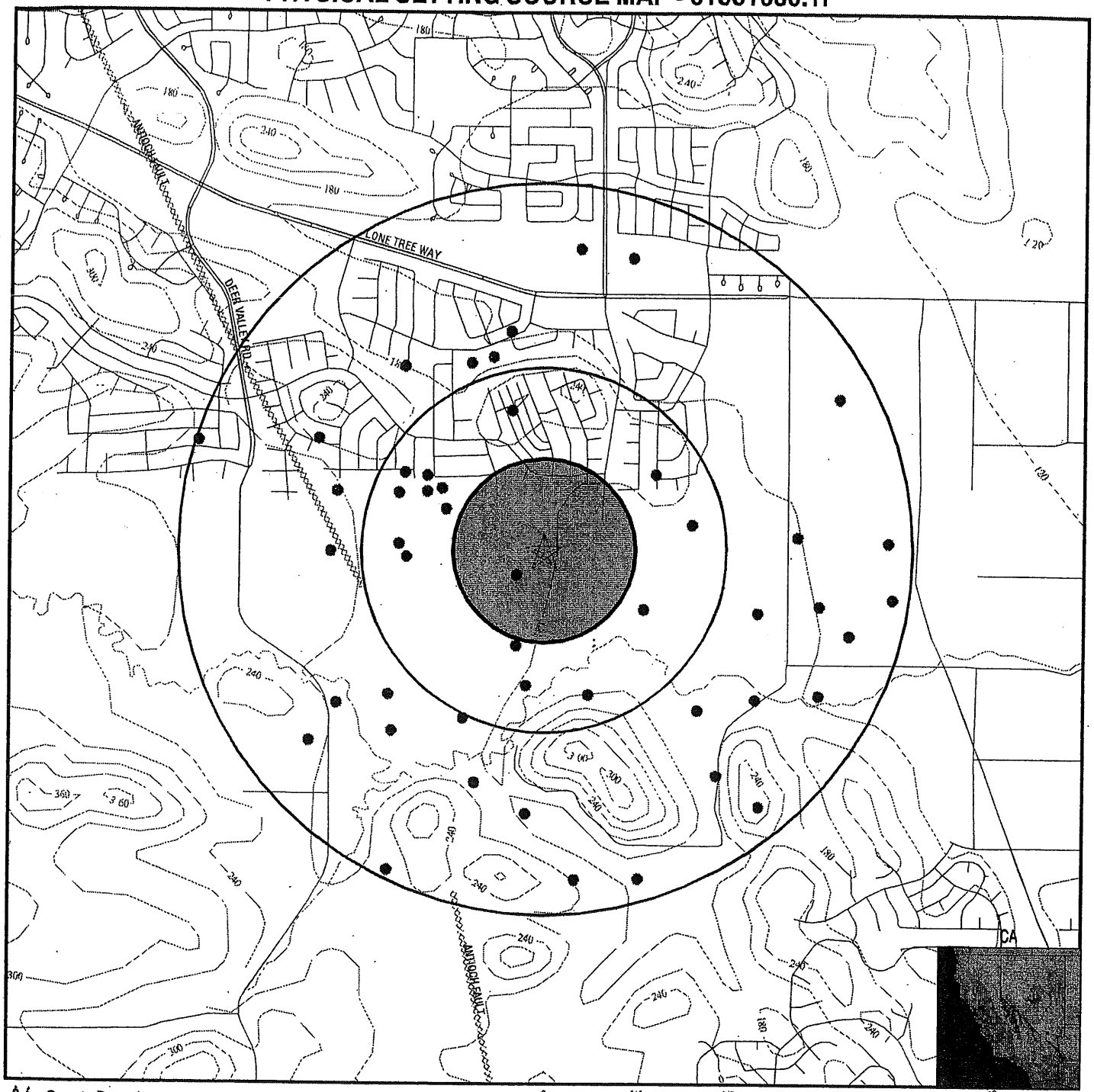
DISTANCE FROM TP (Miles)
1/2 - 1 Mile NNE
1/2 - 1 Mile NNW
1/2 - 1 Mile NW
1/4 - 1/2 Mile NNW
1/2 - 1 Mile WNW
1/4 - 1/2 Mile NE
1/4 - 1/2 Mile WNW
1/2 - 1 Mile WNW
1/4 - 1/2 Mile WNW
1/2 - 1 Mile East
1/4 - 1/2 Mile West

STATE OIL/GAS WELL INFORMATION

DISTANCE FROM TP (Miles)
1/2 - 1 Mile West
0 - 1/8 Mile SW
1/2 - 1 Mile ESE
1/2 - 1 Mile ESE
1/4 - 1/2 Mile SSW
1/2 - 1 Mile SW
1/2 - 1 Mile ESE
1/2 - 1 Mile SW
1/2 - 1 Mile SSW
1/2 - 1 Mile SW
1/2 - 1 Mile SSW
1/2 - 1 Mile South
1/2 - 1 Mile SSE

DISTANCE FROM TP (Miles)
1/4 - 1/2 Mile West
1/2 - 1 Mile East
1/4 - 1/2 Mile ESE
1/2 - 1 Mile ESE
1/4 - 1/2 Mile South
1/4 - 1/2 Mile SSE
1/2 - 1 Mile SE
1/2 - 1 Mile SE
1/2 - 1 Mile SW
1/2 - 1 Mile SE
1/2 - 1 Mile SE
1/2 - 1 Mile SSW
1/2 - 1 Mile South

PHYSICAL SETTING SOURCE MAP - 01301680.1r



- County Boundary
- Major Roads
- Contour Lines
- Earthquake Fault Lines
- Earthquake epicenter, Richter 5 or greater
- Water Wells
- Public Water Supply Wells
- Cluster of Multiple Icons
- Groundwater Flow Direction
- Indeterminate Groundwater Flow at Location
- Groundwater Flow Varies at Location
- Closest Hydrogeological Data
- Oil, gas or related wells

TARGET PROPERTY:	Williamson Property	CUSTOMER:	Ingram Mason & Fairbairn
ADDRESS:	Prewett Ranch Rd/Hillcrest Ave	CONTACT:	Fred Serafin
CITY/STATE/ZIP:	Antioch CA 94531	INQUIRY #:	01301680.1r
LAT/LONG:	37.9516 / 121.7629	DATE:	November 05, 2004 9:02 am

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GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance

Database EDR ID Number

North
1/2 - 1 Mile

OIL_GAS **CA00004576**

Well Number:	2	Status:	Plugged and abandoned-dry hole
API Number:	01320065	Operator:	Sinco Oil Corp.
Latitude:	37.96361	Longitude:	-121.76007
Region:	6	Lease:	Williamson
Section:	04	Township:	01N
Range:	02E	Map Number:	608
Base and Meridian:	Mount Diablo	Total Depth:	4524.00000
Spud Date:	1/27/1971	Abandonment Date:	3/25/1971

NNE
1/2 - 1 Mile

OIL_GAS **CA00004890**

Well Number:	2-4	Status:	Plugged and abandoned-dry hole
API Number:	01300047	Operator:	SWEPI
Latitude:	37.96325	Longitude:	-121.75739
Region:	6	Lease:	Heidorn
Section:	04	Township:	01N
Range:	02E	Map Number:	608
Base and Meridian:	Mount Diablo	Total Depth:	11472.00000
Spud Date:	9/1/1961	Abandonment Date:	11/17/1961

North
1/2 - 1 Mile

OIL_GAS **CA00004607**

Well Number:	31-4	Status:	Plugged and abandoned oil
API Number:	01320029	Operator:	Occidental Petroleum Corp.
Latitude:	37.96035	Longitude:	-121.76356
Region:	6	Lease:	Williamson
Section:	04	Township:	01N
Range:	02E	Map Number:	608
Base and Meridian:	Mount Diablo	Total Depth:	3884.00000
Spud Date:	6/17/1968	Abandonment Date:	7/14/1981

NNW
1/2 - 1 Mile

OIL_GAS **CA00004557**

Well Number:	33-4	Status:	Plugged and abandoned oil-directional
API Number:	01320068	Operator:	Occidental Petroleum Corp.
Latitude:	37.95934	Longitude:	-121.76445
Region:	6	Lease:	Williamson
Section:	04	Township:	01N
Range:	02E	Map Number:	608
Base and Meridian:	Mount Diablo	Total Depth:	3900.00000
Spud Date:	3/29/1971	Abandonment Date:	12/12/1993

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance — Database — EDR ID Number

NNW
1/2 - 1 Mile — **OIL_GAS** — **CA00004598**

Well Number:	32-4	Status:	Plugged and abandoned oil-directional
API Number:	01320042	Operator:	Occidental Petroleum Corp.
Latitude:	37.95911	Longitude:	-121.76556
Region:	6	Lease:	Williamson
Section:	04	Township:	01N
Range:	02E	Map Number:	608
Base and Meridian:	Mount Diablo	Total Depth:	3903.00000
Spud Date:	9/21/1977	Abandonment Date:	4/1/1992

NW
1/2 - 1 Mile — **OIL_GAS** — **CA00004438**

Well Number:	5-5	Status:	Plugged and abandoned oil
API Number:	01320197	Operator:	Venada National
Latitude:	37.95897	Longitude:	-121.76887
Region:	6	Lease:	Prewett
Section:	05	Township:	01N
Range:	02E	Map Number:	608
Base and Meridian:	Mount Diablo	Total Depth:	4224.00000
Spud Date:	6/13/1983	Abandonment Date:	8/11/1989

ENE
1/2 - 1 Mile — **OIL_GAS** — **CA00004898**

Well Number:	3-3	Status:	Plugged and abandoned-dry hole
API Number:	01300032	Operator:	SWEPI
Latitude:	37.95772	Longitude:	-121.74715
Region:	6	Lease:	Dempsey
Section:	03	Township:	01N
Range:	02E	Map Number:	608
Base and Meridian:	Mount Diablo	Total Depth:	5803.00000
Spud Date:	6/14/1963	Abandonment Date:	6/25/1963

NNW
1/4 - 1/2 Mile — **OIL_GAS** — **CA00004625**

Well Number:	3-4	Status:	Plugged and abandoned-dry hole
API Number:	01320004	Operator:	SWEPI
Latitude:	37.95724	Longitude:	-121.76348
Region:	6	Lease:	Williamson
Section:	04	Township:	01N
Range:	02E	Map Number:	608
Base and Meridian:	Mount Diablo	Total Depth:	4235.00000
Spud Date:	6/23/1967	Abandonment Date:	7/6/1967

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance — Database — EDR ID Number

WNW
1/2 - 1 Mile — **OIL_GAS** — **CA00004877**

Well Number:	4-5	Status:	Plugged and abandoned oil
API Number:	01300056	Operator:	Occidental Petroleum Corp.
Latitude:	37.95610	Longitude:	-121.77313
Region:	6	Lease:	Prewett
Section:	05	Township:	01N
Range:	02E	Map Number:	608
Base and Meridian:	Mount Diablo	Total Depth:	5184.00000
Spud Date:	5/1/1964	Abandonment Date:	4/3/1992

WNW
1/2 - 1 Mile — **OIL_GAS** — **CA00004876**

Well Number:	3-5	Status:	Plugged and abandoned-dry hole
API Number:	01300055	Operator:	SWEPI
Latitude:	37.95601	Longitude:	-121.77917
Region:	6	Lease:	Prewett
Section:	05	Township:	01N
Range:	02E	Map Number:	608
Base and Meridian:	Mount Diablo	Total Depth:	6328.00000
Spud Date:	10/30/1963	Abandonment Date:	11/12/1963

WNW
1/4 - 1/2 Mile — **OIL_GAS** — **CA00004411**

Well Number:	5-6	Status:	Plugged and abandoned oil
API Number:	01320235	Operator:	Venada National
Latitude:	37.95478	Longitude:	-121.76884
Region:	6	Lease:	Prewett
Section:	05	Township:	01N
Range:	02E	Map Number:	608
Base and Meridian:	Mount Diablo	Total Depth:	3915.00000
Spud Date:	10/5/1984	Abandonment Date:	8/11/1989

NE
1/4 - 1/2 Mile — **OIL_GAS** — **CA00004891**

Well Number:	4-4	Status:	Plugged and abandoned gas
API Number:	01300048	Operator:	SWEPI
Latitude:	37.95471	Longitude:	-121.75621
Region:	6	Lease:	Heldorn
Section:	04	Township:	01N
Range:	02E	Map Number:	608
Base and Meridian:	Mount Diablo	Total Depth:	5200.00000
Spud Date:	5/30/1962	Abandonment Date:	7/6/1971

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance

Database EDR ID Number

WNW
1/4 - 1/2 Mile

OIL_GAS **CA00004405**

Well Number:	34-4	Status:	Plugged and abandoned oil-directional
API Number:	01320252	Operator:	Occidental Petroleum Corp.
Latitude:	37.95467	Longitude:	-121.76773
Region:	6	Lease:	Williamson
Section:	04	Township:	01N
Range:	02E	Map Number:	608
Base and Meridian:	Mount Diablo	Total Depth:	4400.00000
Spud Date:	8/19/1985	Abandonment Date:	3/27/1992

WNW
1/4 - 1/2 Mile

OIL_GAS **CA00004404**

Well Number:	4	Status:	Plugged and abandoned oil-directional
API Number:	01320250	Operator:	Venturini Associates, Inc.
Latitude:	37.95416	Longitude:	-121.76701
Region:	6	Lease:	Williamson
Section:	09	Township:	01N
Range:	02E	Map Number:	608
Base and Meridian:	Mount Diablo	Total Depth:	3802.00000
Spud Date:	8/6/1985	Abandonment Date:	8/16/1985

WNW
1/4 - 1/2 Mile

OIL_GAS **CA00004414**

Well Number:	3	Status:	Plugged and abandoned oil
API Number:	01320240	Operator:	Venturini Associates, Inc.
Latitude:	37.95403	Longitude:	-121.76773
Region:	6	Lease:	Williamson
Section:	09	Township:	01N
Range:	02E	Map Number:	608
Base and Meridian:	Mount Diablo	Total Depth:	3835.00000
Spud Date:	10/29/1984	Abandonment Date:	12/10/1987

WNW
1/2 - 1 Mile

OIL_GAS **CA00004356**

Well Number:	4	Status:	Plugged and abandoned oil
API Number:	01320292	Operator:	Venturini Associates, Inc.
Latitude:	37.95403	Longitude:	-121.77220
Region:	6	Lease:	Enea-Capitol
Section:	08	Township:	01N
Range:	02E	Map Number:	608
Base and Meridian:	Mount Diablo	Total Depth:	4005.00000
Spud Date:	7/28/1989	Abandonment Date:	11/3/1993

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance — Database — EDR ID Number

WNW
1/4 - 1/2 Mile — **OIL_GAS** — **CA00004393**

Well Number:	1	Status:	Plugged and abandoned oil
API Number:	01320264	Operator:	Venturini Associates, Inc.
Latitude:	37.95397	Longitude:	-121.76914
Region:	6	Lease:	Enea
Section:	08	Township:	01N
Range:	02E	Map Number:	608
Base and Meridian:	Mount Diablo	Total Depth:	3920.00000
Spud Date:	8/14/1986	Abandonment Date:	9/1/1993

WNW
1/4 - 1/2 Mile — **OIL_GAS** — **CA00004423**

Well Number:	2	Status:	Plugged and abandoned oil-directional
API Number:	01320226	Operator:	Venturini Associates, Inc.
Latitude:	37.95334	Longitude:	-121.76680
Region:	6	Lease:	Williamson
Section:	09	Township:	01N
Range:	02E	Map Number:	608
Base and Meridian:	Mount Diablo	Total Depth:	4329.00000
Spud Date:	3/7/1984	Abandonment Date:	11/20/1995

East
1/4 - 1/2 Mile — **OIL_GAS** — **CA00004904**

Well Number:	2-9	Status:	Plugged and abandoned gas
API Number:	01300038	Operator:	Occidental Petroleum Corp.
Latitude:	37.95271	Longitude:	-121.75438
Region:	6	Lease:	Ginochio
Section:	09	Township:	01N
Range:	02E	Map Number:	608
Base and Meridian:	Mount Diablo	Total Depth:	4037.00000
Spud Date:	6/16/1962	Abandonment Date:	10/17/1991

East
1/2 - 1 Mile — **OIL_GAS** — **CA00004319**

Well Number:	1-10D	Status:	001
API Number:	01320340	Operator:	Enron Oil & Gas Co.
Latitude:	37.95223	Longitude:	-121.74920
Region:	6	Lease:	Sunset-Graham
Section:	10	Township:	01N
Range:	02E	Map Number:	608
Base and Meridian:	Mount Diablo	Total Depth:	-1.00000
Spud Date:	3/18/1997	Abandonment Date:	Not Reported

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance

Database EDR ID Number

East
1/2 - 1 Mile

OIL_GAS **CA00004896**

Well Number:	1-10	Status:	Plugged and abandoned gas
API Number:	01300030	Operator:	Occidental Petroleum Corp.
Latitude:	37.95202	Longitude:	-121.74473
Region:	6	Lease:	Continente
Section:	10	Township:	01N
Range:	02E	Map Number:	608
Base and Meridian:	Mount Diablo	Total Depth:	4127.00000
Spud Date:	11/1/1962	Abandonment Date:	7/11/1981

West
1/4 - 1/2 Mile

OIL_GAS **CA00004394**

Well Number:	2	Status:	Plugged and abandoned oil
API Number:	01320265	Operator:	Venturini Associates, Inc.
Latitude:	37.95194	Longitude:	-121.76914
Region:	6	Lease:	Enea
Section:	08	Township:	01N
Range:	02E	Map Number:	608
Base and Meridian:	Mount Diablo	Total Depth:	4058.00000
Spud Date:	11/11/1986	Abandonment Date:	8/30/1993

West
1/2 - 1 Mile

OIL_GAS **CA00004900**

Well Number:	2-8	Status:	Completed gas
API Number:	01300034	Operator:	Occidental Petroleum Corp.
Latitude:	37.95163	Longitude:	-121.77250
Region:	6	Lease:	Enea-Capital
Section:	08	Township:	01N
Range:	02E	Map Number:	608
Base and Meridian:	Mount Diablo	Total Depth:	5100.00000
Spud Date:	7/1/1964	Abandonment Date:	4/7/1992

West
1/4 - 1/2 Mile

OIL_GAS **CA00004377**

Well Number:	3	Status:	Plugged and abandoned oil
API Number:	01320269	Operator:	Venturini Associates, Inc.
Latitude:	37.95143	Longitude:	-121.76876
Region:	6	Lease:	Capital-Enea
Section:	08	Township:	01N
Range:	02E	Map Number:	608
Base and Meridian:	Mount Diablo	Total Depth:	4710.00000
Spud Date:	4/11/1987	Abandonment Date:	11/2/1993

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance

Database EDR ID Number

SW
0 - 1/8 Mile

OIL_GAS **CA00004865**

Well Number:	1-9	Status:	Plugged and abandoned-dry hole
API Number:	01300067	Operator:	SWEPI
Latitude:	37.95071	Longitude:	-121.76323
Region:	6	Lease:	Williamson
Section:	09	Township:	01N
Range:	02E	Map Number:	608
Base and Meridian:	Mount Diablo	Total Depth:	5000.00000
Spud Date:	10/1/1962	Abandonment Date:	7/27/1964

East
1/2 - 1 Mile

OIL_GAS **CA00004874**

Well Number:	33X-10	Status:	Plugged and abandoned oil
API Number:	01300053	Operator:	Occidental Petroleum Corp.
Latitude:	37.94976	Longitude:	-121.74452
Region:	6	Lease:	Maggiora-Capital Co.
Section:	10	Township:	01N
Range:	02E	Map Number:	608
Base and Meridian:	Mount Diablo	Total Depth:	4000.00000
Spud Date:	5/7/1966	Abandonment Date:	4/21/1992

ESE
1/2 - 1 Mile

OIL_GAS **CA00004902**

Well Number:	14-10	Status:	Plugged and abandoned gas
API Number:	01300036	Operator:	Occidental Petroleum Corp.
Latitude:	37.94948	Longitude:	-121.74810
Region:	6	Lease:	Garaventa
Section:	10	Township:	01N
Range:	02E	Map Number:	608
Base and Meridian:	Mount Diablo	Total Depth:	4439.00000
Spud Date:	11/6/1963	Abandonment Date:	4/16/1992

ESE
1/4 - 1/2 Mile

OIL_GAS **CA00004626**

Well Number:	22-9	Status:	Plugged and abandoned gas
API Number:	01320005	Operator:	Occidental Petroleum Corp.
Latitude:	37.94934	Longitude:	-121.75681
Region:	6	Lease:	Ginochio
Section:	09	Township:	01N
Range:	02E	Map Number:	608
Base and Meridian:	Mount Diablo	Total Depth:	4239.00000
Spud Date:	7/7/1967	Abandonment Date:	9/26/1991

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance — Database — EDR ID Number

ESE
1/2 - 1 Mile — **OIL_GAS** — **CA00004905**

Well Number:	21-9	Status:	Plugged and abandoned oil
API Number:	01300039	Operator:	Occidental Petroleum Corp.
Latitude:	37.94920	Longitude:	-121.75116
Region:	6	Lease:	Ginochio
Section:	09	Township:	01N
Range:	02E	Map Number:	608
Base and Meridian:	Mount Diablo	Total Depth:	4500.00000
Spud Date:	4/14/1964	Abandonment Date:	7/13/1981

ESE
1/2 - 1 Mile — **OIL_GAS** — **CA00004901**

Well Number:	12-10	Status:	Plugged and abandoned oil
API Number:	01300035	Operator:	Occidental Petroleum Corp.
Latitude:	37.94832	Longitude:	-121.74665
Region:	6	Lease:	Garaventa
Section:	10	Township:	01N
Range:	02E	Map Number:	608
Base and Meridian:	Mount Diablo	Total Depth:	4500.00000
Spud Date:	10/17/1963	Abandonment Date:	4/10/1992

SSW
1/4 - 1/2 Mile — **OIL_GAS** — **CA00004866**

Well Number:	11-9	Status:	Plugged and abandoned-dry hole
API Number:	01300068	Operator:	SWEPI
Latitude:	37.94790	Longitude:	-121.76323
Region:	6	Lease:	Williamson
Section:	09	Township:	01N
Range:	02E	Map Number:	608
Base and Meridian:	Mount Diablo	Total Depth:	5390.00000
Spud Date:	12/22/1962	Abandonment Date:	1/1/1963

South
1/4 - 1/2 Mile — **OIL_GAS** — **CA00004433**

Well Number:	1	Status:	Plugged and abandoned-dry hole-directional
API Number:	01320212	Operator:	Venturini Associates, Inc.
Latitude:	37.94631	Longitude:	-121.76273
Region:	6	Lease:	Williamson
Section:	09	Township:	01N
Range:	02E	Map Number:	608
Base and Meridian:	Mount Diablo	Total Depth:	4502.00000
Spud Date:	8/27/1983	Abandonment Date:	9/5/1983

GEOCHECK® PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance

Database EDR ID Number

SW
1/2 - 1 Mile

OIL_GAS **CA00004584**

Well Number:	1	Status:	Plugged and abandoned oil
API Number:	01320051	Operator:	Venturini Associates, Inc.
Latitude:	37.94596	Longitude:	-121.76962
Region:	6	Lease:	Sullenger
Section:	08	Township:	01N
Range:	02E	Map Number:	608
Base and Meridian:	Mount Diablo	Total Depth:	4161.00000
Spud Date:	6/16/1969	Abandonment Date:	6/6/1995

SSE
1/4 - 1/2 Mile

OIL_GAS **CA00004586**

Well Number:	1	Status:	Plugged and abandoned-dry hole-directional
API Number:	01320053	Operator:	Sinco Oil Corp.
Latitude:	37.94595	Longitude:	-121.75962
Region:	6	Lease:	Williamson
Section:	09	Township:	01N
Range:	02E	Map Number:	608
Base and Meridian:	Mount Diablo	Total Depth:	4504.00000
Spud Date:	7/23/1969	Abandonment Date:	8/2/1969

ESE
1/2 - 1 Mile

OIL_GAS **CA00004869**

Well Number:	34-10	Status:	Plugged and abandoned oil
API Number:	01300071	Operator:	Occidental Petroleum Corp.
Latitude:	37.94593	Longitude:	-121.74814
Region:	6	Lease:	Ward
Section:	10	Township:	01N
Range:	02E	Map Number:	608
Base and Meridian:	Mount Diablo	Total Depth:	4200.00000
Spud Date:	11/15/1963	Abandonment Date:	4/29/1992

SE
1/2 - 1 Mile

OIL_GAS **CA00004888**

Well Number:	43-9	Status:	Plugged and abandoned oil
API Number:	01300045	Operator:	Occidental Petroleum Corp.
Latitude:	37.94575	Longitude:	-121.75129
Region:	6	Lease:	Ginochio-Shellenberger
Section:	09	Township:	01N
Range:	02E	Map Number:	608
Base and Meridian:	Mount Diablo	Total Depth:	4188.00000
Spud Date:	12/8/1963	Abandonment Date:	7/31/1985

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance

Database EDR ID Number

SW
1/2 - 1 Mile

OIL_GAS **CA00004567**

Well Number:	2	Status:	Plugged and abandoned-dry hole-directional
API Number:	01320079	Operator:	Sinco Oil Corp.
Latitude:	37.94560	Longitude:	-121.77217
Region:	6	Lease:	Sullenger
Section:	08	Township:	01N
Range:	02E	Map Number:	608
Base and Meridian:	Mount Diablo	Total Depth:	4264.00000
Spud Date:	12/16/1971	Abandonment Date:	12/31/1971

SE
1/2 - 1 Mile

OIL_GAS **CA00004884**

Well Number:	4-9	Status:	Plugged and abandoned oil
API Number:	01300041	Operator:	Occidental Petroleum Corp.
Latitude:	37.94533	Longitude:	-121.75410
Region:	6	Lease:	Ginochio-Shellenberger
Section:	09	Township:	01N
Range:	02E	Map Number:	608
Base and Meridian:	Mount Diablo	Total Depth:	4300.00000
Spud Date:	7/6/1962	Abandonment Date:	8/12/1985

SSW
1/2 - 1 Mile

OIL_GAS **CA00004871**

Well Number:	3-9	Status:	Plugged and abandoned oil
API Number:	01300073	Operator:	Occidental Petroleum Corp.
Latitude:	37.94501	Longitude:	-121.76592
Region:	6	Lease:	Williamson
Section:	09	Township:	01N
Range:	02E	Map Number:	608
Base and Meridian:	Mount Diablo	Total Depth:	4914.00000
Spud Date:	6/28/1963	Abandonment Date:	12/2/1993

SW
1/2 - 1 Mile

OIL_GAS **CA00004882**

Well Number:	4-8	Status:	Plugged and abandoned oil
API Number:	01300061	Operator:	Occidental Petroleum Corp.
Latitude:	37.94450	Longitude:	-121.76945
Region:	6	Lease:	Sullenger
Section:	08	Township:	01N
Range:	02E	Map Number:	608
Base and Meridian:	Mount Diablo	Total Depth:	5000.00000
Spud Date:	10/5/1963	Abandonment Date:	12/6/1993

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance

Database EDR ID Number

SW
1/2 - 1 Mile

OIL_GAS **CA00004863**

Well Number:	42-8	Status:	Plugged and abandoned oil
API Number:	01300065	Operator:	Occidental Petroleum Corp.
Latitude:	37.94409	Longitude:	-121.77353
Region:	6	Lease:	Sullenger
Section:	08	Township:	01N
Range:	02E	Map Number:	608
Base and Meridian:	Mount Diablo	Total Depth:	4396.00000
Spud Date:	1/16/1964	Abandonment Date:	12/8/1993

SE
1/2 - 1 Mile

OIL_GAS **CA00004887**

Well Number:	41-9	Status:	Plugged and abandoned gas-directional
API Number:	01300044	Operator:	Occidental Petroleum Corp.
Latitude:	37.94272	Longitude:	-121.75317
Region:	6	Lease:	Ginochio-Shellenberger
Section:	09	Township:	01N
Range:	02E	Map Number:	608
Base and Meridian:	Mount Diablo	Total Depth:	4939.00000
Spud Date:	3/14/1963	Abandonment Date:	9/28/1991

SSW
1/2 - 1 Mile

OIL_GAS **CA00004883**

Well Number:	31-9	Status:	Plugged and abandoned-dry hole
API Number:	01300062	Operator:	SWEPI
Latitude:	37.94244	Longitude:	-121.76533
Region:	6	Lease:	Sullenger
Section:	09	Township:	01N
Range:	02E	Map Number:	608
Base and Meridian:	Mount Diablo	Total Depth:	5000.00000
Spud Date:	8/16/1963	Abandonment Date:	8/28/1963

SE
1/2 - 1 Mile

OIL_GAS **CA00004925**

Well Number:	42-9	Status:	Plugged and abandoned oil
API Number:	01300016	Operator:	Occidental Petroleum Corp.
Latitude:	37.94149	Longitude:	-121.75108
Region:	6	Lease:	Ginochio-Shellenberger
Section:	09	Township:	01N
Range:	02E	Map Number:	608
Base and Meridian:	Mount Diablo	Total Depth:	4100.00000
Spud Date:	8/29/1963	Abandonment Date:	10/17/1991

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance

Database EDR ID Number

South
1/2 - 1 Mile

OIL_GAS **CA00004862**

Well Number:	33-9	Status:	Plugged and abandoned-dry hole
API Number:	01300064	Operator:	SWEPI
Latitude:	37.94120	Longitude:	-121.76273
Region:	6	Lease:	Sullenger
Section:	09	Township:	01N
Range:	02E	Map Number:	608
Base and Meridian:	Mount Diablo	Total Depth:	4351.00000
Spud Date:	4/3/1964	Abandonment Date:	4/12/1964

SSW
1/2 - 1 Mile

OIL_GAS **CA00004379**

Well Number:	2	Status:	Plugged and abandoned oil
API Number:	01320271	Operator:	Venturini Associates, Inc.
Latitude:	37.93896	Longitude:	-121.76963
Region:	6	Lease:	Ginochio
Section:	17	Township:	01N
Range:	02E	Map Number:	608
Base and Meridian:	Mount Diablo	Total Depth:	4300.00000
Spud Date:	7/5/1987	Abandonment Date:	4/22/1993

SSE
1/2 - 1 Mile

OIL_GAS **CA00004885**

Well Number:	21-16	Status:	Plugged and abandoned-dry hole
API Number:	01300042	Operator:	SWEPI
Latitude:	37.93862	Longitude:	-121.75704
Region:	6	Lease:	Ginochio-Shellenberger
Section:	16	Township:	01N
Range:	02E	Map Number:	608
Base and Meridian:	Mount Diablo	Total Depth:	4780.00000
Spud Date:	7/17/1963	Abandonment Date:	7/29/1963

South
1/2 - 1 Mile

OIL_GAS **CA00004903**

Well Number:	1-16	Status:	Plugged and abandoned-dry hole
API Number:	01300037	Operator:	Occidental Petroleum Corp.
Latitude:	37.93858	Longitude:	-121.76027
Region:	6	Lease:	Ginochio
Section:	16	Township:	01N
Range:	02E	Map Number:	608
Base and Meridian:	Mount Diablo	Total Depth:	4535.00000
Spud Date:	5/17/1963	Abandonment Date:	5/14/1992

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

Federal EPA Radon Zone for CONTRA COSTA County: 2

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for CONTRA COSTA COUNTY, CA

Number of sites tested: 55

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	0.760 pCi/L	100%	0%	0%
Living Area - 2nd Floor	0.300 pCi/L	100%	0%	0%
Basement	0.525 pCi/L	100%	0%	0%

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)
Source: United States Geologic Survey
EDR acquired the USGS 7.5' Digital Elevation Model in 2002. 7.5-Minute DEMs correspond to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps.

HYDROLOGIC INFORMATION

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 1999 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 from the U.S. Fish and Wildlife Service.

HYDROGEOLOGIC INFORMATION

AQUIFLOW^R Information System
Source: EDR proprietary database of groundwater flow information
EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit
Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Services
The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

ADDITIONAL ENVIRONMENTAL RECORD SOURCES

FEDERAL WATER WELLS

PWS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)
This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

STATE RECORDS

California Drinking Water Quality Database
Source: Department of Health Services
Telephone: 916-324-2319
The database includes all drinking water compliance and special studies monitoring for the state of California since 1984. It consists of over 3,200,000 individual analyses along with well and water system information.

California Oil and Gas Well Locations for District 2, 3, 5 and 6
Source: Department of Conservation
Telephone: 916-323-1779

RADON

State Database: CA Radon
Source: Department of Health Services
Telephone: 916-324-2208
Radon Database for California

Area Radon Information
Source: USGS
Telephone: 703-356-4020
The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones
Source: EPA
Telephone: 703-356-4020
Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

OTHER

Airport Landing Facilities: Private and public use landing facilities
Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

California Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary fault lines, prepared in 1975 by the United State Geological Survey. Additional information (also from 1975) regarding activity at specific fault lines comes from California's Preliminary Fault Activity Map prepared by the California Division of Mines and Geology.

HILLCREST CLEANERS (Continued) **1004440545**

Mailing Address: 4361 HILLCREST AVE
ANTIOCH, CA 94509 - 8225
County 7

Gepaid: CAL000056810
TSD EPA ID: CA0000084517
Gen County: 7
Tsd County: Sacramento
Tons: .7575
Waste Category: Liquids with halogenated organic compounds > 1000 mg/l
Disposal Method: Transfer Station
Contact: BETTY SHAW
Telephone: (925) 778-7112
Mailing Address: 4361 HILLCREST AVE
ANTIOCH, CA 94509 - 8225
County 7

Gepaid: CAL000056810
TSD EPA ID: CAD053044053
Gen County: 7
Tsd County: 1
Tons: .5850
Waste Category: Liquids with halogenated organic compounds > 1000 mg/l
Disposal Method: Transfer Station
Contact: BETTY SHAW
Telephone: (925) 778-7112
Mailing Address: 4361 HILLCREST AVE
ANTIOCH, CA 94509 - 8225
County 7

Gepaid: CAL000056810
TSD EPA ID: CAD053044053
Gen County: 7
Tsd County: 1
Tons: .0975
Waste Category: Liquids with halogenated organic compounds > 1000 mg/l
Disposal Method: Not reported
Contact: BETTY SHAW
Telephone: (925) 778-7112
Mailing Address: 4361 HILLCREST AVE
ANTIOCH, CA 94509 - 8225
County 7

Click this hyperlink while viewing on your computer to access
6 additional CA HAZNET record(s) in the EDR Site Report.

Contra Costa SL:
Facility ID: 707715
Region: CONTRA COSTA
Facility Status: ACTIVE
Inactive Date: Not reported
Tier: Not reported
Of ASTs On Property: Not reported
Program Status:
UST: Not reported
HWG: Yes
HMMP: Yes
AGT: Not reported
ARP: Not reported

HILLCREST CLEANERS (Continued) **1004440545**

Number Of USTs: Not reported
Generator Fee Item: Not reported

EMISSIONS :
Facility ID : 5975
Air District Code : BA
SIC Code : 7216
Total Priority Score : Not reported
Health Risk Assessment : Not reported
Non-cancer Chronic Haz Index : Not reported
Non-cancer Acute Haz Index : Not reported
Air Basin : SF
Air District Name : BAY AREA AQMD
Community Health Air Pollution Info System : Not reported
Consolidated Emission Reporting Rule : Not reported
County Code : 7
County ID : 7

2
NNW
> 1
26230 ft.

Relative:
Equal

Actual:
182 ft.

FULTON SHIPYARD
307 FULTON SHIPYARD RD
ANTIOCH, CA 94509

CERCLIS 1000417387
FINDS CAD009151762
CA SLIC
CA FID UST
CONTRA COSTA CO. SITE LIST
HIST UST
NFE
EMI

CERCLIS Classification Data:
Site incident category: Not reported
Federal Facility: Not a Federal Facility
Non NPL Status: Other Cleanup Activity: Private Party-Lead Cleanup
Ownership Status: Unknown
NPL Status: Not on the NPL
Contact: Betsy Curnow
Contact Tel: (415) 972-3093
Contact Title: Not reported
Contact: Jere Johnson
Contact Tel: (415) 972-3094
Contact Title: Not reported
Site Description: PRP Lead Clean Up

CERCLIS Assessment History:
Assessment: DISCOVERY — Completed: 09/01/1986
Assessment: PRELIMINARY ASSESSMENT — Completed: 02/01/1987
Assessment: SITE INSPECTION — Completed: 09/01/1988

CERCLIS Site Status:
High

FINDS:
Other Pertinent Environmental Activity Identified at Site:
Comprehensive Environmental Response, Compensation and Liability Information System
Toxics Release Inventory

NFE:
Facility ID: 07440009
Dtsc Region Code : 2
Region Code Definition : BERKELEY
County Code : 07
Site Name Under : Not reported
Current Status Date : 04222003
Current Status Code : PEAR
Current Status : PRELIMINARY ENDANGERMENT ASSESSMENT REQUIRED
Lead Agency Code : DTSC
Lead Agency : DEPT OF TOXIC SUBSTANCES CONTROL
Site Type Code : Not reported

FULTON SHIPYARD (Continued) **1000417387**

Site Type :	N/A
National Priorities List :	N
Tier :	Not reported
Source Of Funding Code :	Not reported
Staff Member :	RMIYA
Supervisor :	Not reported
Sic Code :	44
Sic Code Definition :	WATER TRANSPORTATION
Site Mitigatn & Brnflds Reuse Prog (SMBR) Code :	NC
SMBR Branch :	NORTH COAST
Regional Water Quality Control Board :	CV
RWQCB Definition :	CENTRAL VALLEY
Site Access Controlled :	C
Listed In Haz Wst & Substncs Sites List (CORTESE):	Not reported
Date Hazard Ranked :	Not reported
GW Contamination Suspected :	Not reported
# Of Sources Contributing To Contamination :	0.00000
Lat/Long :	0.00000° 0.00000′ 0.00000″ / 0.00000° 0.00000′ 0.00000″
Direction Lat :	Not reported
Direction Long :	Not reported
Lat/long Method :	Not reported
Entity Lat/long Coordinates Refer To :	Not reported
State Assembly Distt Code :	11
State Senate Distt Code :	7
Identifying Code:	PA ID
ID Value:	151762
Other ID Desc:	ENTIFICATION NUMBERCAD009
Alternate Name(s):	JARVIS BROTHERS
Alternate Name(s):	FULTON SHIPYARD
Alternate Name(s):	CA LAURITZEN
Address(es) :	307 FULTON SHIPYARD ROAD ANTIOCH, CA 94509
Background Info :	Fulton Shipyard operated as a ten-acre shipyard between 1918 and 1999. The Shipyard has been referred to as Jarvis Brothers and then CA Lauritzen Fabrication and maintenance of tugboats, pleasure crafts, and manufacturing of crane equipment were the major onsite operations. Wastes from past onsite operations include oil, bilge water, and blast media containing lead, zinc, and tin. In 1984, the Department of Health Services oversaw the removal of a 500-gallon underground storage tank onsite. Soil sampling conducted in 1988 detected lead as high as 1230 parts per million (ppm) and zinc as high as 1140 ppm. Sediment samples collected in 1994 by U.S. EPA detected lead as high as 822 ppm and mercury up to 3.2 ppm in the vicinity of the marine railway. Contra Costa County Department of Health Services collected samples from a spill abrasive stockpile in 1985 and detected elevated levels of copper (1600 ppm) and zinc (200 ppm).
Facility Id :	07440009
AWP Activities Code :	1.00000
DTSC Site Activity Code :	DISC
Activity Code Def:	DISCOVERY
AWP Activity Id :	Not reported
Dt Activity Due For Completion :	Not reported
Revised Due Date :	Not reported
Date Activity Completed :	03031980
Est # Of Person-years To Complete :	0.00000
Est. Size Of An Activity Code :	Not reported

FULTON SHIPYARD (Continued) **1000417387**

Site Status When Activity Commitment Made : REFRW
Status Code Definition : PROPERTY/SITE REFERRED TO RWQCB
Cubic Yards Of Solids Removed At Completion : 0.00000
Gallons Of Liquid Removed Upon Completion : 0.00000
Cubic Yards Of Solids Treated Upon Completion : 0.00000
Actvty Deleted Via Commitmnt/Completns Screen : RW
Special Program Code: C104
Special Program : CERCLA 104

FID:
Facility ID: 07000563
Reg By: Inactive Underground Storage Tank Location
Cortese Code: Not reported
Status: Inactive
Mail To: Not reported
P O BOX
ANTIOCH, CA 94509
Contact: Not reported
DUNs No: Not reported
Creation: 10/22/93
EPA ID: Not reported
Comments: Not reported
Regulate ID: Not reported
SIC Code: Not reported
Facility Tel: (415) 757-2611
Contact Tel: Not reported
NPDES No: Not reported
Modified: 00/00/00

CA STATE SLIC :
Global Id : SLT5S1443184
Region : STATE
Assigned Name : SLICSITE
Lead Agency Contact : CORI CONDON
Lead Agency : CENTRAL VALLEY RWQCB (REGION 5S)
Lead Agency Case Number : SLT5S144
Responsible Party : FULTON SHIPYARD
Recent Dtw : Not reported
Substance Released : PET

SLIC Region 5:
Facility Status: RI
Pollutant: waste oil
Report Date: 12/16/1994
Lead Agency: Not reported
Unit: Facility is a Spill or site
Date Filed: / /

Contra Costa SL:
Facility ID: 752379
Region: CONTRA COSTA
Facility Status: INACTIVE
Inactive Date: 2002-01-18 00:00:00
Tier: Not reported
Of ASTs On Property: Not reported
Program Status:
UST: Not reported
HWG: Not reported
HMMP: Yes
AGT: Not reported
ARP: Not reported
Number Of USTs: X
Generator Fee Item: Yes

UST HIST:
Facility ID: 52379
Total Tanks: 1
Owner Address: 307 FULTON SHIPYARD ROAD
Owner Name: ANGELINE L. FULTON
Region: STATE

FULTON SHIPYARD (Continued) **1000417387**

ANTIOCH, CA 94509

Tank Used for:	PRODUCT		
Tank Num:	1	Container Num:	1
Tank Capacity:	00000500	Year Installed:	Not reported
Type of Fuel:	REGULAR	Tank Construction:	Not Reported
Leak Detection:	Visual		
Contact Name:	Not reported	Telephone:	(415) 757-2611
Facility Type:	Other	Other Type:	SHIPYARD

EMISSIONS :

Facility ID :	11472
Air District Code :	BA
SIC Code :	4499
Total Priority Score :	Not reported
Health Risk Assessment :	Not reported
Non-cancer Chronic Haz Index :	Not reported
Non-cancer Acute Haz Index :	Not reported
Air Basin :	SF
Air District Name :	BAY AREA AQMD
Community Health Air Pollution Info System :	Not reported
Consolidated Emission Reporting Rule :	Not reported
County Code :	7
County ID :	7

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
ANTIOCH	S102359868	HOLLAND TRACT - PAPER PULP LANDSPREADING	HOLLAND TRACT, KNIGHTSEN CA 94548		SWF/LF
ANTIOCH	S103676223	PROPERTY OF ROLAND LUKA	920 MAINFLEET CT		HAZNET
ANTIOCH	S106528913	EAST CONTRA COSTA CO COLLECTION CNTR	WILBER AVE @ VIERA AVE		SWF/LF
BRENTWOOD	S102260121	BETTENCOURT, EVELYN T	RT 1, BOX 116	94513	CONTRA COSTA CO. SITE LIST
BRENTWOOD	S102260124	HARDIN, CHARLES W	RT 1, BOX 55A	94513	CONTRA COSTA CO. SITE LIST
BRENTWOOD	S102260125	BRANSCUM, LUTHER W	RT 1, BOX 55B	94513	CONTRA COSTA CO. SITE LIST
BRENTWOOD	S102260126	SOITE, CATARINA	RT 1, BOX 7	94513	CONTRA COSTA CO. SITE LIST
BRENTWOOD	S103464216	KARAGLANIS, FRANK P	RT 1, BOX 42	94513	CONTRA COSTA CO. SITE LIST
BRENTWOOD	S106516835	A L CHRISTENSEN & SON	RT 1, BOX 20	94513	CONTRA COSTA CO. SITE LIST
BRENTWOOD	S102260127	MAGGIORA, MELVIN	RT 2, BOX 197	94513	CONTRA COSTA CO. SITE LIST
BRENTWOOD	S102260129	CARLISLE, ROY	RT 2, BOX 261	94513	CONTRA COSTA CO. SITE LIST
BRENTWOOD	S104161982	RIPPEE RANCH	RT 2, BOX 241	94513	CONTRA COSTA CO. SITE LIST
BRENTWOOD	S101580870	NORMAN'S BRENTWOOD NURSERY	RR 3 BOX 526 HWY 4	94513	CA FID UST, CONTRA COSTA CO. SITE LIST
BRENTWOOD	S101580858	CLEMONS, EARL	RT 3, BOX 970	94513	CONTRA COSTA CO. SITE LIST
BRENTWOOD	S101623515	BILL BRANDT FORD, INC.	1245 HIGHWAY 4	94513	CA FID UST, CONTRA COSTA CO. SITE LIST
BRENTWOOD	S102260089	CAL TRANS HIGHWAY WIDENING	HWY 4 / SPRUCE	94513	CONTRA COSTA CO. SITE LIST
BRENTWOOD	S103464211	MARSH CREEK #2 DEHYDRATION STATION	HWY 4 / SUNSET RD	94513	CONTRA COSTA CO. SITE LIST
BRENTWOOD	S105022926	BLUE GOOSE PROPERTIES	380 HWY 4 S	94513	LUST, Cortese
BRENTWOOD	S106248330	COUGHRAN MECHANICAL SERVICES,	HIGHWAY 4 / SUNSET RD	94513	EMI
BRENTWOOD	U001596363	MANGINI BROS	HIGHWAY 4	94513	HIST UST
BRENTWOOD	U003784124	MANGINI BROS	HWY 4	94513	UST, CONTRA COSTA CO. SITE LIST
BRENTWOOD	U001596356	L. ORDAN LADD	BYRON HIGHWAY AT	94513	HIST UST
BRENTWOOD	U003784169	LADD, L. JORDAN	BYRON HWY	94513	UST, CONTRA COSTA CO. SITE LIST
BRENTWOOD	1003879687	SANTE FE PACIFIC PIPELINE PARTNERS	SE CORNER OF BALFOUR RD & FAIRVIEW AVE.	94513	CERC-NFRAP
BRENTWOOD	S101581132	CHEAPER! #151	LONE TREE WAY/HWY 4	94513	CA FID UST, CONTRA COSTA CO. SITE LIST
BRENTWOOD	1006825529	GOTLAND OIL INC	W OF HWY 4 & SO OF LONE TREE W	94513	FINDS, EMI
BRENTWOOD	S102260139	NICHOLSON COMPANY	SPRUCE AVE / HWY 4	94513	CONTRA COSTA CO. SITE LIST
OAKLEY	1005496366	SHOSHONE OIL CORPORATION	HWY 4 & RAYE AVE	94561	FINDS, EMI
OAKLEY	1006249937	IRONHOUSE SANITARY DISTRICT	HIGHWAY 4	94561	FINDS, EMI

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Elapsed ASTM days: Provides confirmation that this EDR report meets or exceeds the 90-day updating requirement of the ASTM standard.

FEDERAL ASTM STANDARD RECORDS

NPL: National Priority List
Source: EPA
Telephone: N/A
National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 07/30/04
Date Made Active at EDR: 09/09/04
Database Release Frequency: Semi-Annually

Date of Data Arrival at EDR: 08/03/04
Elapsed ASTM days: 37
Date of Last EDR Contact: 11/02/04

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 3
Telephone 215-814-5418

EPA Region 4
Telephone 404-562-8033

EPA Region 6
Telephone: 214-655-6659

EPA Region 8
Telephone: 303-312-6774

Proposed NPL: Proposed National Priority List Sites
Source: EPA
Telephone: N/A

Date of Government Version: 07/22/04
Date Made Active at EDR: 09/09/04
Database Release Frequency: Semi-Annually

Date of Data Arrival at EDR: 08/03/04
Elapsed ASTM days: 37
Date of Last EDR Contact: 11/02/04

CERCLIS: Comprehensive Environmental Response, Compensation, and Liability Information System
Source: EPA
Telephone: 703-413-0223
CERCLIS contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 08/10/04
Date Made Active at EDR: 10/27/04
Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 09/21/04
Elapsed ASTM days: 36
Date of Last EDR Contact: 09/21/04

CERCLIS-NFRAP: CERCLIS No Further Remedial Action Planned
Source: EPA
Telephone: 703-413-0223
As of February 1995, CERCLIS sites designated "No Further Remedial Action Planned" (NFRAP) have been removed from CERCLIS. NFRAP sites may be sites where, following an initial investigation, no contamination was found, contamination was removed quickly without the need for the site to be placed on the NPL, or the contamination was not serious enough to require Federal Superfund action or NPL consideration. EPA has removed approximately 25,000 NFRAP sites to lift the unintended barriers to the redevelopment of these properties and has archived them as historical records so EPA does not needlessly repeat the investigations in the future. This policy change is part of the EPA's Brownfields Redevelopment Program to help cities, states, private investors and affected citizens to promote economic redevelopment of unproductive urban sites.

Date of Government Version: 08/10/04
Date Made Active at EDR: 10/27/04
Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 09/21/04
Elapsed ASTM days: 36
Date of Last EDR Contact: 09/21/04

CORRACTS: Corrective Action Report
Source: EPA
Telephone: 800-424-9346
CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 06/15/04
Date Made Active at EDR: 08/10/04
Database Release Frequency: Semi-Annually

Date of Data Arrival at EDR: 06/25/04
Elapsed ASTM days: 46
Date of Last EDR Contact: 09/07/04

RCRIS: Resource Conservation and Recovery Information System
Source: EPA
Telephone: 800-424-9346
Resource Conservation and Recovery Information System. RCRIS includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs): generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month. Small quantity generators (SQGs): generate between 100 kg and 1,000 kg of hazardous waste per month. Large quantity generators (LQGs): generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month. Transporters are individuals or entities that move hazardous waste from the generator off-site to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 08/10/04
Date Made Active at EDR: 10/11/04
Database Release Frequency: Varies

Date of Data Arrival at EDR: 08/24/04
Elapsed ASTM days: 48
Date of Last EDR Contact: 08/24/04

ERNS: Emergency Response Notification System
Source: National Response Center, United States Coast Guard
Telephone: 202-260-2342
Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 12/31/03
Date Made Active at EDR: 03/12/04
Database Release Frequency: Annually

Date of Data Arrival at EDR: 01/26/04
Elapsed ASTM days: 46
Date of Last EDR Contact: 10/25/04

FEDERAL ASTM SUPPLEMENTAL RECORDS

BRS: Biennial Reporting System
Source: EPA/NTIS
Telephone: 800-424-9346
The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/01/01
Database Release Frequency: Biennially

Date of Last EDR Contact: 09/20/04
Date of Next Scheduled EDR Contact: 12/13/04

CONSENT: Superfund (CERCLA) Consent Decrees
Source: Department of Justice, Consent Decree Library
Telephone: Varies
Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 03/05/04
Database Release Frequency: Varies

Date of Last EDR Contact: 10/25/04
Date of Next Scheduled EDR Contact: 01/24/05

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

ROD: Records Of Decision
Source: EPA
Telephone: 703-416-0223
Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 06/07/04
Database Release Frequency: Annually

Date of Last EDR Contact: 10/06/04
Date of Next Scheduled EDR Contact: 01/03/05

DELISTED NPL: National Priority List Deletions
Source: EPA
Telephone: N/A
The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 07/30/04
Database Release Frequency: Quarterly

Date of Last EDR Contact: 11/02/04
Date of Next Scheduled EDR Contact: 01/31/05

FINDS: Facility Index System/Facility Identification Initiative Program Summary Report
Source: EPA
Telephone: N/A
Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 09/09/04
Database Release Frequency: Quarterly

Date of Last EDR Contact: 09/08/04
Date of Next Scheduled EDR Contact: 01/03/05

HMIRS: Hazardous Materials Information Reporting System
Source: U.S. Department of Transportation
Telephone: 202-366-4555
Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 02/17/04
Database Release Frequency: Annually

Date of Last EDR Contact: 04/20/04
Date of Next Scheduled EDR Contact: 07/19/04

MLTS: Material Licensing Tracking System
Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 07/15/04
Database Release Frequency: Quarterly

Date of Last EDR Contact: 10/04/04
Date of Next Scheduled EDR Contact: 01/03/05

MINES: Mines Master Index File
Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959

Date of Government Version: 06/04/04
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 09/28/04
Date of Next Scheduled EDR Contact: 12/27/04

NPL LIENS: Federal Superfund Liens
Source: EPA
Telephone: 202-564-4267
Federal Superfund Liens. Under the authority granted the USEPA by the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner receives notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/91
Database Release Frequency: No Update Planned

Date of Last EDR Contact: 08/23/04
Date of Next Scheduled EDR Contact: 11/22/04

PADS: PCB Activity Database System
Source: EPA
Telephone: 202-564-3887
PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 06/29/04
Database Release Frequency: Annually

Date of Last EDR Contact: 08/10/04
Date of Next Scheduled EDR Contact: 11/08/04

DOD: Department of Defense Sites
Source: USGS
Telephone: 703-692-8801
This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 10/01/03
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 08/12/04
Date of Next Scheduled EDR Contact: 11/08/04

UMTRA: Uranium Mill Tailings Sites
Source: Department of Energy
Telephone: 505-845-0011
Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized. In 1978, 24 inactive uranium mill tailings sites in Oregon, Idaho, Wyoming, Utah, Colorado, New Mexico, Texas, North Dakota, South Dakota, Pennsylvania, and on Navajo and Hopi tribal lands, were targeted for cleanup by the Department of Energy.

Date of Government Version: 04/22/04
Database Release Frequency: Varies

Date of Last EDR Contact: 09/20/04
Date of Next Scheduled EDR Contact: 12/20/04

ODI: Open Dump Inventory
Source: Environmental Protection Agency
Telephone: 800-424-9346
An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/85
Database Release Frequency: No Update Planned

Date of Last EDR Contact: 05/23/95
Date of Next Scheduled EDR Contact: N/A

FUDS: Formerly Used Defense Sites
Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 12/31/03
Database Release Frequency: Varies

Date of Last EDR Contact: 10/04/04
Date of Next Scheduled EDR Contact: 01/03/05

INDIAN RESERV: Indian Reservations
Source: USGS
Telephone: 202-208-3710
This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 10/01/03
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 08/12/04
Date of Next Scheduled EDR Contact: 11/08/04

RAATS: RCRA Administrative Action Tracking System
Source: EPA
Telephone: 202-564-4104
RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/95
Database Release Frequency: No Update Planned

Date of Last EDR Contact: 09/07/04
Date of Next Scheduled EDR Contact: 12/06/04

TRIS: Toxic Chemical Release Inventory System
Source: EPA
Telephone: 202-566-0250
Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/02
Database Release Frequency: Annually

Date of Last EDR Contact: 09/20/04
Date of Next Scheduled EDR Contact: 12/20/04

TSCA: Toxic Substances Control Act
Source: EPA
Telephone: 202-260-5521
Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/02
Database Release Frequency: Every 4 Years

Date of Last EDR Contact: 09/07/04
Date of Next Scheduled EDR Contact: 12/06/04

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
Source: EPA
Telephone: 202-564-2501

Date of Government Version: 04/13/04
Database Release Frequency: Quarterly

Date of Last EDR Contact: 09/07/04
Date of Next Scheduled EDR Contact: 12/20/04

SSTS: Section 7 Tracking Systems
Source: EPA
Telephone: 202-564-5008
Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/01
Database Release Frequency: Annually

Date of Last EDR Contact: 10/18/04
Date of Next Scheduled EDR Contact: 01/17/05

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-564-2501
FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/13/04
Database Release Frequency: Quarterly

Date of Last EDR Contact: 09/07/04
Date of Next Scheduled EDR Contact: 12/20/04

STATE OF CALIFORNIA ASTM STANDARD RECORDS

AWP: Annual Workplan Sites
Source: California Environmental Protection Agency
Telephone: 916-323-3400
Known Hazardous Waste Sites. California DTSC's Annual Workplan (AWP), formerly BEP, identifies known hazardous substance sites targeted for cleanup.

Date of Government Version: 10/05/04
Date Made Active at EDR: 11/03/04
Database Release Frequency: Annually

Date of Data Arrival at EDR: 10/15/04
Elapsed ASTM days: 19
Date of Last EDR Contact: 09/16/04

CAL-SITES: Calsites Database
Source: Department of Toxic Substance Control
Telephone: 916-323-3400
The Calsites database contains potential or confirmed hazardous substance release properties. In 1996, California EPA reevaluated and significantly reduced the number of sites in the Calsites database.

Date of Government Version: 10/05/04
Date Made Active at EDR: 11/03/04
Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 10/15/04
Elapsed ASTM days: 19
Date of Last EDR Contact: 09/16/04

CHMIRS: California Hazardous Material Incident Report System
Source: Office of Emergency Services
Telephone: 916-845-8400
California Hazardous Material Incident Reporting System. CHMIRS contains information on reported hazardous material incidents (accidental releases or spills).

Date of Government Version: 12/31/03
Date Made Active at EDR: 06/25/04
Database Release Frequency: Varies

Date of Data Arrival at EDR: 05/18/04
Elapsed ASTM days: 38
Date of Last EDR Contact: 08/23/04

CORTESE: "Cortese" Hazardous Waste & Substances Sites List
Source: CAL EPA/Office of Emergency Information
Telephone: 916-323-9100
The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites). This listing is no longer updated by the state agency.

Date of Government Version: 04/01/01
Date Made Active at EDR: 07/26/01
Database Release Frequency: No Update Planned

Date of Data Arrival at EDR: 05/29/01
Elapsed ASTM days: 58
Date of Last EDR Contact: 10/28/04

NOTIFY 65: Proposition 65 Records
Source: State Water Resources Control Board
Telephone: 916-445-3846
Proposition 65 Notification Records. NOTIFY 65 contains facility notifications about any release which could impact drinking water and thereby expose the public to a potential health risk.

Date of Government Version: 10/21/93
Date Made Active at EDR: 11/19/93
Database Release Frequency: No Update Planned

Date of Data Arrival at EDR: 11/01/93
Elapsed ASTM days: 18
Date of Last EDR Contact: 10/18/04

TOXIC PITS: Toxic Pits Cleanup Act Sites
Source: State Water Resources Control Board
Telephone: 916-227-4364
Toxic PITS Cleanup Act Sites. TOXIC PITS identifies sites suspected of containing hazardous substances where cleanup has not yet been completed.

APPENDIX B

Laboratory Data Sheets/Chain of Custody

IMFC

Sequoia
Analytical

819 Striker Ave Ste 8
Sacramento, CA 95834
(916) 921-9600
FAX (916) 921-0100
www.sequoialabs.com

18 November, 2004

Fred Serafin
Ingram Mason & Fairbairn (IMFC) - California St.
50 California St., Ste 1500
San Francisco, CA 94111

RE: Williamson Property
Work Order: S411202

Enclosed are the results of analyses for samples received by the laboratory on 11/09/04 13:18. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Ron Chew For Alan B. Kemp
Chief Operating Officer/VP

CA ELAP Certificate #1624

Sequoia Analytical

819 Striker Ave Ste 8
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Ingram Mason & Fairbairn (IMFC) - California St. 50 California St., Ste 1500 San Francisco CA, 94111	Project:Williamson Property Project Number:PHC-198J Project Manager:Fred Serafin	S411202 **Reported:** 11/18/04 15:50

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
WS-1	S411202-01	Soil	11/08/04 00:00	11/09/04 13:18
WS-2	S411202-02	Soil	11/08/04 00:00	11/09/04 13:18
WS-3	S411202-03	Soil	11/08/04 00:00	11/09/04 13:18
WS-4	S411202-04	Soil	11/08/04 00:00	11/09/04 13:18
WS-5	S411202-05	Soil	11/08/04 00:00	11/09/04 13:18
WS-6	S411202-06	Soil	11/08/04 00:00	11/09/04 13:18

The results in this report apply to the samples analyzed in accordance with the chain of custody document. Unless otherwise stated, results are reported on a wet weight basis. This analytical report must be reproduced in its entirety.

Sequoia Analytical

819 Striker Ave Ste 8
Sacramento, CA 95834
(916) 921-9600
FAX (916) 921-0100
www.sequoialabs.com

Ingram Mason & Fairbairn (IMFC) - California St.	Project:Williamson Property	S411202
50 California St., Ste 1500	Project Number:PHC-198J	**Reported:**
San Francisco CA, 94111	Project Manager:Fred Serafin	11/18/04 15:50

Total Metals by EPA 6000/7000 Series Methods

Sequoia Analytical - Sacramento

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
WS-1 (S411202-01) Soil Sampled: 11/08/04 00:00 Received: 11/09/04 13:18									
Arsenic	ND	10	mg/kg	4	4110161	11/11/04	11/15/04	EPA 6010B	
Mercury	**0.045**	0.020	"	1	4110172	11/11/04	11/11/04	EPA 7471A	
Lead	ND	10	"	4	4110161	11/11/04	11/15/04	EPA 6010B	
WS-3 (S411202-03) Soil Sampled: 11/08/04 00:00 Received: 11/09/04 13:18									
Arsenic	ND	10	mg/kg	4	4110161	11/11/04	11/15/04	EPA 6010B	
Mercury	**0.024**	0.020	"	1	4110172	11/11/04	11/11/04	EPA 7471A	
Lead	ND	10	"	4	4110161	11/11/04	11/15/04	EPA 6010B	
WS-5 (S411202-05) Soil Sampled: 11/08/04 00:00 Received: 11/09/04 13:18									
Arsenic	ND	10	mg/kg	4	4110161	11/11/04	11/15/04	EPA 6010B	
Mercury	ND	0.020	"	1	4110172	11/11/04	11/11/04	EPA 7471A	
Lead	ND	10	"	4	4110161	11/11/04	11/15/04	EPA 6010B	
WS-6 (S411202-06) Soil Sampled: 11/08/04 00:00 Received: 11/09/04 13:18									
Arsenic	ND	10	mg/kg	4	4110161	11/11/04	11/15/04	EPA 6010B	
Mercury	**0.022**	0.020	"	1	4110172	11/11/04	11/11/04	EPA 7471A	
Lead	ND	10	"	4	4110161	11/11/04	11/15/04	EPA 6010B	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. Unless otherwise stated, results are reported on a wet weight basis. This analytical report must be reproduced in its entirety.

Sequoia Analytical

819 Striker Ave Ste 8
Sacramento, CA 95834
(916) 921-9600
FAX (916) 921-0100
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Ingram Mason & Fairbairn (IMFC) - California St. 50 California St., Ste 1500 San Francisco CA, 94111	Project:Williamson Property Project Number:PHC-198J Project Manager:Fred Serafin	S411202 **Reported:** 11/18/04 15:50

Organochlorine Pesticides by EPA Method 8081A

Star Analytical, Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
WS-1 (S411202-01) Soil Sampled: 11/08/04 00:00 Received: 11/09/04 13:18									**D-01**
Aldrin	ND	20.0	ug/kg	20	V4K1709			EPA 8081A	
alpha-BHC	ND	20.0	"	"	"	"	"	"	
beta-BHC	ND	20.0	"	"	"	"	"	"	
delta-BHC	ND	20.0	"	"	"	"	"	"	
gamma-BHC (Lindane)	ND	20.0	"	"	"	"	"	"	
alpha-Chlordane	ND	100	"	"	"	"	"	"	
gamma-Chlordane	ND	40.0	"	"	"	"	"	"	
4,4'-DDD	ND	120	"	"	"	"	"	"	
4,4'-DDE	ND	120	"	"	"	"	"	"	
4,4'-DDT	ND	120	"	"	"	"	"	"	
Dieldrin	ND	40.0	"	"	"	"	"	"	
Endosulfan I	ND	40.0	"	"	"	"	"	"	
Endosulfan II	ND	40.0	"	"	"	"	"	"	
Endosulfan sulfate	ND	120	"	"	"	"	"	"	
Endrin	ND	40.0	"	"	"	"	"	"	
Endrin aldehyde	ND	120	"	"	"	"	"	"	
Heptachlor	ND	40.0	"	"	"	"	"	"	
Heptachlor epoxide	ND	40.0	"	"	"	"	"	"	
Methoxychlor	ND	400	"	"	"	"	"	"	
Toxaphene	ND	1600	"	"	"	"	"	"	
Surrogate: TCMX		*162 %*	*29.1-172*		"	"	"	"	
Surrogate: Decachlorobiphenyl		*262 %*	*12.9-225*		"	"	"	"	*S-06*
WS-2 (S411202-02) Soil Sampled: 11/08/04 00:00 Received: 11/09/04 13:18									**D-01**
Aldrin	ND	20.0	ug/kg	20	V4K1709			EPA 8081A	
alpha-BHC	ND	20.0	"	"	"	"	"	"	
beta-BHC	ND	20.0	"	"	"	"	"	"	
delta-BHC	ND	20.0	"	"	"	"	"	"	
gamma-BHC (Lindane)	ND	20.0	"	"	"	"	"	"	
alpha-Chlordane	ND	100	"	"	"	"	"	"	
gamma-Chlordane	ND	40.0	"	"	"	"	"	"	
4,4'-DDD	ND	120	"	"	"	"	"	"	
4,4'-DDE	ND	120	"	"	"	"	"	"	
4,4'-DDT	ND	120	"	"	"	"	"	"	
Dieldrin	ND	40.0	"	"	"	"	"	"	
Endosulfan I	ND	40.0	"	"	"	"	"	"	
Endosulfan II	ND	40.0	"	"	"	"	"	"	
Endosulfan sulfate	ND	120	"	"	"	"	"	"	
Endrin	ND	40.0	"	"	"	"	"	"	
Endrin aldehyde	ND	120	"	"	"	"	"	"	

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Sequoia Analytical

819 Striker Ave Ste 8
Sacramento, CA 95834
(916) 921-9600
FAX (916) 921-0100
www.sequoialabs.com

Ingram Mason & Fairbairn (IMFC) - California St. 50 California St., Ste 1500 San Francisco CA, 94111	Project:Williamson Property Project Number:PHC-198J Project Manager:Fred Serafin	S411202 **Reported:** 11/18/04 15:50

Organochlorine Pesticides by EPA Method 8081A

Star Analytical, Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
WS-2 (S411202-02) Soil Sampled: 11/08/04 00:00 Received: 11/09/04 13:18									**D-01**
Heptachlor	ND	40.0	ug/kg	20	V4K1709			EPA 8081A	
Heptachlor epoxide	ND	40.0	"	"	"	"	"	"	
Methoxychlor	ND	400	"	"	"	"	"	"	
Toxaphene	ND	1600	"	"	"	"	"	"	
Surrogate: TCMX		*158 %*	*29.1-172*		"	"	"	"	
Surrogate: Decachlorobiphenyl		*468 %*	*12.9-225*		"	"	"	"	*S-06*
WS-3 (S411202-03) Soil Sampled: 11/08/04 00:00 Received: 11/09/04 13:18									**D-01**
Aldrin	ND	20.0	ug/kg	20	V4K1709			EPA 8081A	
alpha-BHC	ND	20.0	"	"	"	"	"	"	
beta-BHC	ND	20.0	"	"	"	"	"	"	
delta-BHC	ND	20.0	"	"	"	"	"	"	
gamma-BHC (Lindane)	ND	20.0	"	"	"	"	"	"	
alpha-Chlordane	ND	100	"	"	"	"	"	"	
gamma-Chlordane	ND	40.0	"	"	"	"	"	"	
4,4'-DDD	ND	120	"	"	"	"	"	"	
4,4'-DDE	ND	120	"	"	"	"	"	"	
4,4'-DDT	ND	120	"	"	"	"	"	"	
Dieldrin	ND	40.0	"	"	"	"	"	"	
Endosulfan I	ND	40.0	"	"	"	"	"	"	
Endosulfan II	ND	40.0	"	"	"	"	"	"	
Endosulfan sulfate	ND	120	"	"	"	"	"	"	
Endrin	ND	40.0	"	"	"	"	"	"	
Endrin aldehyde	ND	120	"	"	"	"	"	"	
Heptachlor	ND	40.0	"	"	"	"	"	"	
Heptachlor epoxide	ND	40.0	"	"	"	"	"	"	
Methoxychlor	ND	400	"	"	"	"	"	"	
Toxaphene	ND	1600	"	"	"	"	"	"	
Surrogate: TCMX		*158 %*	*29.1-172*		"	"	"	"	
Surrogate: Decachlorobiphenyl		*187 %*	*12.9-225*		"	"	"	"	

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Ingram Mason & Fairbairn (IMFC) - California St.	Project:Williamson Property	S411202
50 California St., Ste 1500	Project Number:PHC-198J	**Reported:**
San Francisco CA, 94111	Project Manager:Fred Serafin	11/18/04 15:50

Organochlorine Pesticides by EPA Method 8081A

Star Analytical, Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
WS-4 (S411202-04) Soil Sampled: 11/08/04 00:00 Received: 11/09/04 13:18									**D-01**
Aldrin	ND	20.0	ug/kg	20	V4K1709			EPA 8081A	
alpha-BHC	ND	20.0	"	"	"	"	"	"	
beta-BHC	ND	20.0	"	"	"	"	"	"	
delta-BHC	ND	20.0	"	"	"	"	"	"	
gamma-BHC (Lindane)	ND	20.0	"	"	"	"	"	"	
alpha-Chlordane	ND	100	"	"	"	"	"	"	
gamma-Chlordane	ND	40.0	"	"	"	"	"	"	
4,4'-DDD	ND	120	"	"	"	"	"	"	
4,4'-DDE	ND	120	"	"	"	"	"	"	
4,4'-DDT	ND	120	"	"	"	"	"	"	
Dieldrin	ND	40.0	"	"	"	"	"	"	
Endosulfan I	ND	40.0	"	"	"	"	"	"	
Endosulfan II	ND	40.0	"	"	"	"	"	"	
Endosulfan sulfate	ND	120	"	"	"	"	"	"	
Endrin	ND	40.0	"	"	"	"	"	"	
Endrin aldehyde	ND	120	"	"	"	"	"	"	
Heptachlor	ND	40.0	"	"	"	"	"	"	
Heptachlor epoxide	ND	40.0	"	"	"	"	"	"	
Methoxychlor	ND	400	"	"	"	"	"	"	
Toxaphene	ND	1600	"	"	"	"	"	"	
Surrogate: TCMX		*143 %*	*29.1-172*		"	"	"	"	
Surrogate: Decachlorobiphenyl		*389 %*	*12.9-225*		"	"	"	"	*S-06*
WS-5 (S411202-05) Soil Sampled: 11/08/04 00:00 Received: 11/09/04 13:18									**D-01**
Aldrin	ND	20.0	ug/kg	20	V4K1709			EPA 8081A	
alpha-BHC	ND	20.0	"	"	"	"	"	"	
beta-BHC	ND	20.0	"	"	"	"	"	"	
delta-BHC	ND	20.0	"	"	"	"	"	"	
gamma-BHC (Lindane)	ND	20.0	"	"	"	"	"	"	
alpha-Chlordane	ND	100	"	"	"	"	"	"	
gamma-Chlordane	ND	40.0	"	"	"	"	"	"	
4,4'-DDD	ND	120	"	"	"	"	"	"	
4,4'-DDE	ND	120	"	"	"	"	"	"	
4,4'-DDT	ND	120	"	"	"	"	"	"	
Dieldrin	ND	40.0	"	"	"	"	"	"	
Endosulfan I	ND	40.0	"	"	"	"	"	"	
Endosulfan II	ND	40.0	"	"	"	"	"	"	
Endosulfan sulfate	ND	120	"	"	"	"	"	"	
Endrin	ND	40.0	"	"	"	"	"	"	
Endrin aldehyde	ND	120	"	"	"	"	"	"	

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Ingram Mason & Fairbairn (IMFC) - California St. 50 California St., Ste 1500 San Francisco CA, 94111	Project:Williamson Property Project Number:PHC-198J Project Manager:Fred Serafin	S411202 **Reported:** 11/18/04 15:50

Organochlorine Pesticides by EPA Method 8081A

Star Analytical, Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
WS-5 (S411202-05) Soil Sampled: 11/08/04 00:00 Received: 11/09/04 13:18									**D-01**
Heptachlor	ND	40.0	ug/kg	20	V4K1709			EPA 8081A	
Heptachlor epoxide	ND	40.0	"	"	"	"	"	"	
Methoxychlor	ND	400	"	"	"	"	"	"	
Toxaphene	ND	1600	"	"	"	"	"	"	
Surrogate: TCMX		*161 %*	*29.1-172*		"	"	"	"	
Surrogate: Decachlorobiphenyl		*133 %*	*12.9-225*		"	"	"	"	
WS-6 (S411202-06) Soil Sampled: 11/08/04 00:00 Received: 11/09/04 13:18									**D-01**
Aldrin	ND	20.0	ug/kg	20	V4K1709			EPA 8081A	
alpha-BHC	ND	20.0	"	"	"	"	"	"	
beta-BHC	ND	20.0	"	"	"	"	"	"	
delta-BHC	ND	20.0	"	"	"	"	"	"	
gamma-BHC (Lindane)	ND	20.0	"	"	"	"	"	"	
alpha-Chlordane	ND	100	"	"	"	"	"	"	
gamma-Chlordane	ND	40.0	"	"	"	"	"	"	
4,4'-DDD	ND	120	"	"	"	"	"	"	
4,4'-DDE	ND	120	"	"	"	"	"	"	
4,4'-DDT	ND	120	"	"	"	"	"	"	
Dieldrin	ND	40.0	"	"	"	"	"	"	
Endosulfan I	ND	40.0	"	"	"	"	"	"	
Endosulfan II	ND	40.0	"	"	"	"	"	"	
Endosulfan sulfate	ND	120	"	"	"	"	"	"	
Endrin	ND	40.0	"	"	"	"	"	"	
Endrin aldehyde	ND	120	"	"	"	"	"	"	
Heptachlor	ND	40.0	"	"	"	"	"	"	
Heptachlor epoxide	ND	40.0	"	"	"	"	"	"	
Methoxychlor	ND	400	"	"	"	"	"	"	
Toxaphene	ND	1600	"	"	"	"	"	"	
Surrogate: TCMX		*143 %*	*29.1-172*		"	"	"	"	
Surrogate: Decachlorobiphenyl		*131 %*	*12.9-225*		"	"	"	"	

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Ingram Mason & Fairbairn (IMFC) - California St. 50 California St., Ste 1500 San Francisco CA, 94111	Project: Williamson Property Project Number: PHC-198J Project Manager: Fred Serafin	S411202 **Reported:** 11/18/04 15:50

Total Metals by EPA 6000/7000 Series Methods - Quality Control

Sequoia Analytical - Sacramento

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4110161 - EPA 3050B / EPA 6010B										
Blank (4110161-BLK1)				Prepared: 11/11/04 Analyzed: 11/15/04						
Lead	ND	2.5	mg/kg							
Arsenic	ND	2.5	"							
Laboratory Control Sample (4110161-BS1)				Prepared: 11/11/04 Analyzed: 11/15/04						
Arsenic	49.0	2.5	mg/kg	50.0		98	80-120			
Lead	49.8	2.5	"	50.0		100	80-120			
Matrix Spike (4110161-MS1)	**Source: S411062-02**			Prepared: 11/11/04 Analyzed: 11/15/04						
Arsenic	61.0	10	mg/kg	50.0	24	74	80-120			QC02
Lead	179	10	"	50.0	130	98	80-120			
Matrix Spike Dup (4110161-MSD1)	**Source: S411062-02**			Prepared: 11/11/04 Analyzed: 11/15/04						
Lead	158	10	mg/kg	50.0	130	56	80-120	12	20	QC02
Arsenic	54.3	10	"	50.0	24	61	80-120	12	20	QC02
Batch 4110172 - EPA 7471A / EPA 7471A										
Blank (4110172-BLK1)				Prepared & Analyzed: 11/11/04						
Mercury	ND	0.020	mg/kg							
Laboratory Control Sample (4110172-BS1)				Prepared & Analyzed: 11/11/04						
Mercury	0.424	0.020	mg/kg	0.417		102	80-120			
Matrix Spike (4110172-MS1)	**Source: S411102-01**			Prepared & Analyzed: 11/11/04						
Mercury	0.446	0.020	mg/kg	0.417	ND	107	75-125			
Matrix Spike Dup (4110172-MSD1)	**Source: S411102-01**			Prepared & Analyzed: 11/11/04						
Mercury	0.489	0.020	mg/kg	0.417	ND	117	75-125	9	20	

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Ingram Mason & Fairbairn (IMFC) - California St. 50 California St., Ste 1500 San Francisco CA, 94111	Project:Williamson Property Project Number:PHC-198J Project Manager:Fred Serafin	S411202 **Reported:** 11/18/04 15:50

Organochlorine Pesticides by EPA Method 8081A - Quality Control

Star Analytical, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch V4K1709 - EPA 3550 / EPA 8081A										
Blank (V4K1709-BLK1)				Prepared & Analyzed: 11/17/04						
Aldrin	ND	1.00	ug/kg							
alpha-BHC	ND	1.00	"							
beta-BHC	ND	1.00	"							
delta-BHC	ND	1.00	"							
gamma-BHC (Lindane)	ND	1.00	"							
alpha-Chlordane	ND	5.00	"							
gamma-Chlordane	ND	2.00	"							
4,4'-DDD	ND	6.00	"							
4,4'-DDE	ND	6.00	"							
4,4'-DDT	ND	6.00	"							
Dieldrin	ND	2.00	"							
Endosulfan I	ND	2.00	"							
Endosulfan II	ND	2.00	"							
Endosulfan sulfate	ND	6.00	"							
Endrin	ND	2.00	"							
Endrin aldehyde	ND	6.00	"							
Heptachlor	ND	2.00	"							
Heptachlor epoxide	ND	2.00	"							
Methoxychlor	ND	20.0	"							
Toxaphene	ND	80.0	"							
Surrogate: TCMX	*6.96*		"	*8.33*		*83.6*	*29.1-172*			
Surrogate: Decachlorobiphenyl	*19.1*		"	*8.33*		*229*	*12.9-225*			*A-05*
Laboratory Control Sample (V4K1709-BS1)				Prepared & Analyzed: 11/17/04						
Aldrin	7.25	1.00	ug/kg	8.33		87.0	33.3-159			
gamma-BHC (Lindane)	6.84	1.00	"	8.33		82.1	28.2-151			
4,4'-DDT	7.98	6.00	"	8.33		95.8	35.7-168			
Dieldrin	7.09	2.00	"	8.33		85.1	56.4-125			
Endrin	9.33	2.00	"	8.33		112	34-182			
Heptachlor	8.12	2.00	"	8.33		97.5	38.8-161			
Surrogate: TCMX	*6.23*		"	*8.33*		*74.8*	*29.1-172*			
Surrogate: Decachlorobiphenyl	*19.6*		"	*8.33*		*235*	*12.9-225*			*A-05*

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Ingram Mason & Fairbairn (IMFC) - California St. 50 California St., Ste 1500 San Francisco CA, 94111	Project:Williamson Property Project Number:PHC-198J Project Manager:Fred Serafin	S411202 **Reported:** 11/18/04 15:50

Organochlorine Pesticides by EPA Method 8081A - Quality Control

Star Analytical, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch V4K1709 - EPA 3550 / EPA 8081A										
Laboratory Control Sample Dup (V4K1709-BSD1)				Prepared & Analyzed: 11/17/04						
Aldrin	7.32	1.00	ug/kg	8.33		87.9	33.3-159	0.961	16.7	
gamma-BHC (Lindane)	6.85	1.00	"	8.33		82.2	28.2-151	0.146	30	
4,4'-DDT	8.94	6.00	"	8.33		107	35.7-168	11.3	13	
Dieldrin	7.61	2.00	"	8.33		91.4	56.4-125	7.07	21	
Endrin	10.2	2.00	"	8.33		122	34-182	8.91	12	
Heptachlor	8.57	2.00	"	8.33		103	38.8-161	5.39	48	
Surrogate: TCMX	*5.24*		"	*8.33*		*62.9*	*29.1-172*			
Surrogate: Decachlorobiphenyl	*22.2*		"	*8.33*		*267*	*12.9-225*			*A-05*

The results in this report apply to the samples analyzed in accordance with the chain of custody document. Unless otherwise stated, results are reported on a wet weight basis. This analytical report must be reproduced in its entirety.

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Ingram Mason & Fairbairn (IMFC) - California St. 50 California St., Ste 1500 San Francisco CA, 94111	Project:Williamson Property Project Number:PHC-198J Project Manager:Fred Serafin	S411202 **Reported:** 11/18/04 15:50

Notes and Definitions

S-06	The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interferences.
QC02	The percent recovery was below the control limits. The sample results may still be useful for their intended purpose.
D-01	Sample diluted. dilution due to extract appearance.
A-05	The surrogate recovery for this sample is outside of established control limits. Review of associated QC indicates that the recovery of this surrogate does not negatively impact the usability of the data.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

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IMFC

INGRAM MASON

FIFTY CALIFORNIA STREET, SUITE 1500
SAN FRANCISCO, CALIFORNIA 94111
TEL (415) 951-4793
FAX (800) 804-IMFC

S411202

CHAIN OF CUSTODY FORM

Project: Williamson Property
Job Number: PHC-1985
Project Manager: Fred Serafin
Date: 11/08/04

Laboratory: Sequoia Analytical
Turnaround Time: 5-Days
Results To: Fred Serafin
Samplers: FS

ITEM NO.	SAMPLE NUMBER	DATE AND TIME SAMPLED: Date	Time	MATRIX	# CONTAINERS & PRESERVATIVES: UNPRESERVED	H_2SO_4	HNO_3	HCl			ANALYSIS REQUESTED / TYPE OF CONTAINER: 8081A	As	Pb	Hg			COMMENTS
1	WS-1	11/08/04		Soil	1						✓	✓	✓	✓			-01 A
2	WS-2	↓		↓	1						✓						-02
3	WS-3				1						✓	✓	✓	✓			-03
4	WS-4				1						✓						-04
5	WS-5				1						✓	✓	✓	✓			-05
6	WS-6	↓		↓	1						✓	✓	✓	✓			-06 ↓
7																	
8																	
9																	
10																	
11																	
12																	

COMMENTS: 10°

MISCELLANEOUS

Number of Coolers	Type of Coolant
1	ICE

COMMENTS:

E-mail results ASAP.

Page 1 of 1

CHAIN OF CUSTODY RECORD

Relinquished by: (signature & affiliation)	Date/Time	Received by: (signature & affiliation)	Date/Time
[signature]	11/09/04 1:18 p.m.	[signature] Sequoia	11/9/04 1318
Relinquished by: (signature & affiliation)		Received by: (signature & affiliation)	Date/Time
Relinquished by: (signature & affiliation)		Received by: (signature & affiliation)	Date/Time
Relinquished by: (signature & affiliation)		Received by: (signature & affiliation)	Date/Time
Dispatched by: (signature & affiliation)	Date/Time	Received for lab by:	Date/Time

APPENDIX J

FINAL BIOLOGICAL ASSESSMENT

MONK & ASSOCIATES
Environmental Consultants

BIOLOGICAL ASSESSMENT
AVIANO PROJECT
CITY OF ANTIOCH, CALIFORNIA

July 5, 2007

Applicant:

Pulte Home Corporation
6210 Stoneridge Mall Road, 5th floor
Pleasanton, California 94588-3268

Contact: Mr. Mike Serpa

Applicant's Agent:

Monk & Associates, Inc.
1136 Saranap Avenue, Suite Q
Walnut Creek, California 94595

Attention: Mr. Geoff Monk

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1. INTRODUCTION

On behalf of Pulte Home Corporation (applicant), Monk & Associates, Inc. (M&A) has prepared this biological assessment (BA) to assist the U.S. Army Corps of Engineers (Corps) and the U.S. Fish and Wildlife Service (USFWS) in evaluating the potential environmental effects on federally listed species from the construction of the proposed Aviano Housing Development (the Development Project) and its associated infrastructure. To mitigate impacts to wetlands, and to habitats that could support the federally listed Threatened California tiger salamander (*Ambystoma californiense*), California red-legged frog (*Rana aurora draytonii*), and the federally listed Endangered San Joaquin kit fox (*Vulpes macrotis mutica*), the applicant will permanently preserve approximately 34.4 acres of the Aviano property (the Open Space Preserve) and 166.6 acres of the Ralph Property (the Offsite Mitigation Site), located in eastern Contra Costa County. A seasonal pond (the Wetland Mitigation Project) will be constructed on the Offsite Mitigation Site as a part of the mitigation compensation plan. This BA discusses the physical impacts from construction of the Development Project, its associated infrastructure, and the mitigation pond, and prescribes avoidance and mitigation measures that will be implemented to reduce impacts to federally listed species to the greatest extent practicable.

As the proposed project will impact waters of the United States, on behalf of the applicant, M&A has submitted a Preconstruction Notice (PCN) to the Corps for the Development Project. As this project may affect federal listed species as detailed herein, the Corps is required to initiate consultation with the USFWS pursuant to Section 7 of the Federal Endangered Species Act (FESA). This BA has been prepared to assist the Corps and the USFWS with this consultation. In this BA we provide: 1) a description of the habitats present on the Development Site and the Offsite Mitigation Site; 2) a list of the federally listed and proposed species that have potential to occur on the Development Site and that are known to occur on or near the Offsite Mitigation Site; 3) avoidance and mitigation measures for these listed species; and 4) all other necessary information that the USFWS will need to prepare a Biological Opinion for this project.

2. PROJECT LOCATION AND SETTING

The Development Site is approximately 189 acres and is located in the City of Antioch, in Contra Costa County, California (Figures 1 and 2). This area of Antioch is rapidly transitioning from agricultural uses to residential and commercial development, and at one point in time was referred to as the Sand Creek Specific Plan Area. That Specific Plan has never been adopted by the City of Antioch. The Development Site is surrounded by a mixture of land uses including existing single-family residential uses and a community park to the north; the planned Antioch Unified School District (AUSD) Magnet High School on the southwest corner of the Development Site, the mostly constructed Kaiser Hospital medical facilities to the west, and undeveloped land planned for future mixed use and commercial development to the west and east; and finally undeveloped grazing land to the south. Contra Costa County Flood Control and Water Conservation District (Flood Control District) currently has a large proposed detention basin to the south.

The Development Site consists of a field of grazed, non-native annual grassland. In the past dating to as early as 1957, the Development Site has been used intermittently for cultivated hay production. The aerial photograph record of the site shows that hay crops were consistently

planted every few years since 1957. Sand Creek is a perennial creek that runs west to east through the southern portion of the Development Site. Running along the eastern Development Site boundary is a man-made drainage ditch that retains and drains stormwater from the high density residential development to the north of the Development Site into Sand Creek on the south end of the Development Site. A cultivated wheat field and Heidorn Ranch Road are located to the east of the Development Site.

3. DEVELOPMENT PROJECT DESCRIPTION

An adult residential development is planned on approximately 149.9 acres of the 189-acre Development Site, which will include up to 570 adult-single-family units, a recreation facility, parks, landscaped areas and associated parking. The Development Site parcel extends south of Sand Creek; however, all proposed development is north of this creek. The Development Project includes a proposal to dedicate a preserve consisting of a 4.1-acre creek buffer area on both sides of Sand Creek, and a contiguous 30.3-acre open space preserve on the south side of Sand Creek which is the remainder of the Development Site parcel south of Sand Creek (Sheet 1). The General Plan for the City Antioch shows the road alignment for Hillcrest Avenue through the Development Site, over Sand Creek, and south through the Open Space Preserve. The Development Project would extend Hillcrest Avenue only to the intersection of the new Sand Creek Road, north of the creek. The bridge and extension south through the Open Space Preserve are not part of the Development Project. While it is unlikely that this road alignment would be constructed through the Open Space Preserve, the 4.7-acre alignment of the bridge and road through the Open Space Preserve is not included in or as a part of this preserve.

The applicant has agreed that the Development Project would include the construction of roadway and utility improvements from approximately the Kaiser Hospital site to the recently approved Magnet High School located on approximately 9.5 acres of land adjacent to the southwest corner of the Development Site. Other than construction of roadway and utility improvements, construction of the school is not part of the proposed project.

Road and utility improvements are also planned as a part of this project that would impact *approximately 28.8 offsite acres* (Sheet 1). Primary vehicular ingress and egress to the Development Site would be provided by a newly constructed extension of Hillcrest Avenue within and along the eastern boundary of the Development Site. The Development Project also includes the construction of a new segment of Sand Creek Road both on and off the Development Site. This new segment of road would be constructed roughly parallel to Sand Creek, 200 to several hundred feet north of Sand Creek. From the termination point of the Hillcrest Avenue extension on the Development Site, Sand Creek Road would be constructed westward to Kaiser Hospital. East of the termination point of the Hillcrest Avenue extension, Sand Creek Road would only consist of an unimproved dirt road to where it intersects with Heidorn Ranch Road east of the Development Site (Sheet 1). Entry to the residential component of the Development Site would be via both Hillcrest Avenue and Sand Creek Road from the west. A temporary access road to the Magnet School and a permanent access road to the Magnet School are also included in this project.

The proposed project would also enlarge and extend the existing 24-inch sanitary sewer pipe located in Heidorn Ranch Road, northeast of the Development Site. This pipe would be extended south alongside the alignment of Heidorn Ranch Road and west to the Development Site within the unimproved alignment of Sand Creek Road.

The Development Site is relatively flat with stormwater naturally draining to the south and east where it is conveyed to Sand Creek. Two existing 84-inch storm drain pipes run south along the western boundary of the Development Site and outfall into an existing Flood Control District detention basin just south of the site immediately adjacent to Sand Creek. Storm water from the proposed Development Site would be conveyed by a system of pipes into two constructed water quality basins that will be located south of the proposed alignment of Sand Creek Road but north of Sand Creek. These basins would discharge water into Sand Creek through two engineered outfall structures, and other than the outfall structures, will be located outside the creek buffer.

4. USFWS REGULATORY HISTORY

On February 14, 2006, M&A (Mr. Geoff Monk, Ms. Hope Kingma), the Applicant (Mr. Mike Serpa, Mr. Rodger Miller, and Mr. Dennis O'Keefe) and the Applicant's legal counsel (Mr. Robert Uram, Esq.) met with Ms. Sheila Larsen (USFWS), Ms. Janice Gan (CDFG) and Mr. John Kopchick (Contra Costa County) at the Contra Costa County Community Development Department in Martinez. Our meeting occurred on the same day as a multi-agency coordination meeting for the East Contra Costa County Habitat Conservation Plan (HCP). The HCP coordination team graciously allowed an hour of time for the Aviano Team to present and discuss the Aviano project (then called the Ginocchio-Nunn/Edgewood project).

5. FEDERAL SECTION 7 NEXUS AGENCY

This BA has been prepared by M&A on behalf of the applicant to facilitate a Federal Endangered Species Act (FESA) Section 7 consultation between the USFWS and the Corps. The USFWS can use this document as a basis for its consultation with the Corps regarding potential impacts to federal listed species that may occur from the proposed project and its associated infrastructure.

6. REGULATORY FRAMEWORK

6.1 Federal Endangered Species Acts

The FESA requires any federal agency that is contemplating a discretionary permitting action, or other action, that may affect a federal-listed threatened or endangered species, to consult with the USFWS pursuant to Section 7 of the FESA. Non-federal agencies contemplating actions that may affect federal listed species are required to consult with the USFWS pursuant to Section 10 of the FESA. The end result of such consultations is issuance of an Incidental Take Permit or denial of such a permit. An Incidental Take Permit authorizes an applicant to incidentally kill, harm, or harass species protected pursuant to the FESA that occurs while the applicant is otherwise conducting legal activities. Incidental Take Permits are not authorized by the National Marine Fisheries Service (NMFS) or USFWS if the permitted action would jeopardize the continued existence of a listed species. However, if a take could occur that is incidental to otherwise legally contemplated activities, and would not jeopardize the continued existence of a

federal listed species, an Incidental Take Permit is usually authorized by the USFWS and/or NMFS that permits the project to proceed while remaining in compliance with the FESA.

Regarding the Development Project under discussion herein, no impacts would occur to listed fish species under the regulatory authority of the NMFS on the Development Site. As such, there is no requirement to consult with the NMFS for the proposed project. In addition, extensive and thorough rare plant surveys have been conducted on the Development Site that demonstrate that there are no federally-listed plants that would likely be impacted by the proposed project. Therefore there will be no requirement to consult with the USFWS regarding impacts to plant species that are protected pursuant to the FESA. However, *the proposed project will likely result in impacts to animal species that are protected pursuant to the FESA, and that are under USFWS regulatory authority pursuant to the FESA.* Below, these potential impacts to federal listed species are detailed.

7. REQUEST FOR FORMAL SECTION 7 CONSULTATION

Tables 1 and 2 provide a complete description of all federally listed species, proposed listed species, and all federal species of concern known to occur within 5 miles of the Development Site. *We request that the biological opinion prepared by the USFWS address the listed or proposed listed species found in these tables, and any other listed or proposed listed species that may have been inadvertently overlooked in this analysis. If there are any proposed listed species that are not contemplated herein, M&A requests that the USFWS' Biological Opinion include a Formal Conference for these proposed listed species.*

8. ANALYSIS METHODS

8.1 Background Research

Prior to preparing this biological assessment, M&A researched the most recent version of the California Department of Fish and Game's (CDFG) Natural Diversity Database, RareFind 3.1 application (CNDDB 2007) for historical and recent records of federal and/or state listed and proposed listed plant and animals known to occur in the region of the Development Site. This CNDDB search focused on the Antioch South, California U.S. Geological Survey 7.5 minute quadrangle and the surrounding 8 quadrangles. In addition, M&A researched California Native Plant Society's (CNPS) *Inventory of Rare and Endangered Plants of California* (CNPS 2001) for records of special-status plants known in the region of the Development Site. All special-status species records were compiled in tables. M&A examined all known record locations for special-status species to determine if special-status species could occur on the Development Site or within an area of affect.

8.2 Wetland Delineation

A wetland delineation was conducted on April 6, 12, and 25, 2005 by Mr. G. Monk and Ms. H. Kingma. The delineation was completed in accordance with Corps' 1987 *Wetlands Delineation Manual.* The Corps conducted a site verification of the delineation map on September 28, 2005 (Corps File number 2005-006-28). Sheet 2 presents the confirmed wetland delineation map for the Development Site.

In addition, on April 14, 2005, M&A conducted a preliminary wetland delineation of the adjacent Ginocchio property located immediately east of the Development Site. Sheet 3 provides the preliminary wetland delineation map for this property. The delineation was also completed in accordance with the Corps' 1987 *Wetlands Delineation Manual* and was submitted to the Corps in 2005. Shortly thereafter the applicant abandoned that part of the Development Site and thus cancelled the Corps confirmation visit. This delineation nonetheless has bearing on the Development Site as the proposed project also includes proposed utility improvements on the Ginocchio property. Accordingly, with the previous preliminary wetlands map prepared on that property by M&A, M&A was able to assess potential impacts to waters of the U.S. on the Ginocchio property from construction of off-site utility improvements. These impacts are discussed further below.

8.3 Rare Plant Surveys

Special-status plant surveys were conducted on the Development Site and all other areas of proposed impacts by M&A biologists Ms. S. Lynch and Ms. S. Scolari on April 6 and 7, May 5, June 9, and July 7, 2005. The surveys followed CDFG (2000) and CNPS (2001) published survey guidelines. These guidelines state that special-status surveys should be conducted at the proper time of year when special-status and locally significant plants are both evident and identifiable. These guidelines also state that the surveys be floristic in nature with every plant observed identified to species, subspecies, or variety as necessary to determine their rarity status. Finally, these surveys must be conducted in a manner that is consistent with conservation ethics and accepted plant collection and documentation techniques. Following these guidelines, surveys were conducted during the months when special-status plant species from the region are known to be evident and flowering. All areas of the Development Site were examined by walking systematic meandering transects through potential habitat, and by closely examining any existing microhabitats that could potentially support special-status plants.

Nearly all plant species found on the Development Site were identified to species; all were identified to the level needed to determine whether they qualify as special-status plants. A list of all vascular plant taxa encountered within the Development Site was recorded in the field. Plants that needed further evaluation were collected and keyed in the lab. Final determinations for collected plants were made by keying specimens using standard references such as *The Jepson Manual* (Hickman 1993).

The results of Monk & Associates' literature research and field reconnaissance are provided in the sections below.

9. PLANT COMMUNITIES

The Development Site was last hay cropped at least eight years ago (data from aerial photograph analyses). Currently there are three "naturalized" plant communities that occur within the proposed Development Site. Non-native annual grassland is the dominant community, covering the majority of the Development Site. Sporadic oak riparian woodland occurs along Sand Creek, and freshwater marsh habitat occupies a man-made ditch located along the eastern Development Site boundary. These three plant communities are discussed below.

9.1 Non-Native Annual Grassland

Approximately 95 percent of the Development Site can be characterized as non-native annual grassland. This plant community covers the Development Site's nearly flat, grazed fields, and the steep north-facing slope at the southern end of the Development Site. It also covers the more hummocky areas of the northern edge of the Development Site where fill material has been deposited over the years. This plant community is dominated by non-native grasses such as Italian ryegrass (*Lolium multiflorum*), wild oat (*Avena fatua)*, foxtail barley (*Hordeum murinum leporinum*), and ripgut brome (*Bromus diandrus*). Dominant forbs include native blow-wives (*Achyrachaena mollis*) and alkali mallow (*Malvella leprosa*) and non-native rose clover (*Trifolium hirtum)*, yellow star-thistle (*Centaurea solstitialis*) and purple vetch (*Vicia benghalensis)*. Other common non-native herbaceous species include mayweed (*Anthemis cotula)*, bindweed (*Convolvulus arvensis),* smooth cat's ear (*Hypochaeris glabra*), bristly ox-tongue (*Picris echioides*), and prickly lettuce (*Lactuca serriola*). In addition to the blow wives and alkali mallow, other native wildflowers observed in this community onsite included purple owl's clover (*Castilleja exserta* ssp. *exserta)*, false dandelion (*Agoseris grandiflora* and *A. heterophylla),* silver puffs (*Uropappus lindleyi)* and miniature lupine (*Lupinus bicolor*). These plants have been grazed by cattle, horses and llamas to only a few inches high. On the Development Site's steep north-facing slope on the south side of Sand Creek, valley oak (*Quercus lobata)* trees and blue oak (*Quercus douglasii)* trees dot the slope. In this area the herbaceous species are taller due to reduced grazing pressure and the shade provided by the oak trees.

9.2 Oak Riparian Woodland

While most of Sand Creek on the Development Site has no associated riparian canopy, a few areas are vegetated by oak riparian woodland along Sand Creek on the Development Site. This plant community is dominated by valley oaks and blue oaks, with California buckeyes (*Aesculus californica*) and Fremont cottonwood trees (*Populus fremontii*) occurring in association with these dominant species. A non-native tree has also become established along this creek, tree tobacco (*Nicotiana glauca*). The oaks, cottonwoods, and buckeyes are scattered along the creek, providing an open canopy and allowing sun light to reach the water. With rare exceptions, the canopy does not extend outside the top-of-banks of Sand Creek. This open stream zone environment has allowed for the development of herbaceous and shrubby understories. California rose (*Rosa californica*) grows in dense thickets along portions of the creek, while mugwort (*Artemesia douglasiana*), goose grass (*Galium aparine)* and miner's lettuce (*Claytonia perfoliata)* are scattered along the creek banks and at the water line.

9.3 Freshwater Marsh

Freshwater marsh habitat on the Development Site is restricted to a channelized, man-made ditch located along the eastern Development Site boundary. This ditch enters the Development Site at its northeastern corner via an approximately 3 to 4-foot diameter concrete culvert that emanates from the neighboring development to the north of the Development Site. This culvert carries stormwater and nuisance surface runoff from the housing developments located north of the Development Site to Sand Creek located on the south end of the Development Site. Due to the urban water contributions to this ditch, it is perennial. This ditch is channelized throughout its length along the Development Site's eastern boundary. Top-of-bank to top-of-bank of this ditch

is approximately 20 feet wide, and at the bottom of the ditch at the ordinary high water marks it is approximately 8 to 10 feet. This ditch enters Sand Creek at the southeastern project corner. Vegetation growing along this ditch consists of common aquatic plants typical of urban settings: whorled pennywort (*Hydrocotyle verticillata*), narrow-leaved cattails (*Typha angustifolia*), broad-leaved cattails (*Typha latifolia*), and water cress (*Rorippa nasturtium-aquaticum*).

10. FEDERAL LISTED SPECIES THAT COULD BE AFFECTED BY THE DEVELOPMENT PROJECT

The Development Project includes impacts to 149.9 acres on the Development Site, 28.8 acres off the Development Site for road and utility improvements, and 2.0 acres on the Offsite Mitigation Site where a mitigation wetland pond would be constructed. As proposed pond impacts will enhance and otherwise result in the creation of CTS and CRLF breeding habitat, they are regarded as beneficial and compensation for these impacts is not warranted. Below, we detail these impacts.

10.1 Federal Listed Plant Species That Could Be Affected at the Development Site

10.1.1 POTENTIAL PLANT IMPACTS AT THE DEVELOPMENT SITE

A search of the CNPS *Inventory* and CDFG's CNDDB found 20 special-status plant species known to occur in the region of the Development Site. Of these, four are federally-listed species. Table 1 lists these species, their legal status, habitat requirements and probability of occurring on the Development Site. All plants observed on the Development Site and at the other areas of proposed impacts during the April through July 2005 floristic surveys are listed in Table 3, attached. Nomenclature used for plant names follows *The Jepson Manual* (Hickman 1993) and changes made to this manual as published on the Jepson Interchange Project website (http://ucjeps.berkeley.edu/interchange/index.html). No federal and/or state listed and proposed listed plant species were identified on the Development Site.

One special-status plant species was identified on the Development Site during the appropriately timed surveys: large-leafed storksbill (*California macrophylla). California macrophylla (*formerly named *Erodium macrophyllum)* does not have any state or federal status. This plant is a CNPS List 2 species. CNPS List 2 species are not protected under either the State or Federal Endangered Species Acts, thus impacts to this plant are not considered herein.

10.1.2 POTENTIAL PLANT IMPACTS AT THE OFFSITE MITIGATION SITE

A total of 2.0 acres of disturbance are associated with the construction of a wetland pond that will provide breeding habitat for both the California red-legged frog and the California tiger salamander. No federal listed plants or any other special-status plant species would be impacted by the pond construction.

10.2 Federal Listed Animal Species That Could Be Affected at the Development Site

10.2.1 POTENTIAL ANIMAL IMPACTS AT THE DEVELOPMENT SITE

Table 2 presents a list of 16 special-status animal species known from the region of the Development Site. Many of these animals are not expected to occur on or near the Development

Site due to an absence of suitable habitats such as coastal scrub and sandy substrates. Eleven of the special-status animal species presented in Table 2 have potential to occur on the Development Site due to the presence of suitable habitats; however, only five of the eleven species are federally listed species. These five species are further discussed below.

10.2.2 VERNAL POOL FAIRY SHRIMP

Vernal pool fairy shrimp (*Branchinecta lynchi*) was designated as threatened in its entire range on September 19, 1994 (Federal Register 59:48136-48153). Critical habitat for this species was designated on August 6, 2003 (Federal Register 68: 46683-46867). *The Development Site is not located within this species' designated critical habitat* (Figure 3).

The vernal pool fairy shrimp is a small aquatic crustacean that ranges in size from ½ to one inch long. Fairy shrimp feed on algae, bacteria, protozoa, rotifers and bits of detritus. The vernal pool fairy shrimp occupies a variety of different vernal pool habitats, from small, clear, sandstone rock pools to large, turbid, alkaline, grassland valley floor pools. It tends to occur in smaller pools (less than 0.05-acre) that are most commonly found in grass or mud bottomed swales, or basalt flow depression pools in unplowed grasslands. It has also been collected in large vernal pools (e.g. 25 acres). Vernal pool fairy shrimp have been collected from early December to early May (USFWS 1994).

The female drops eggs to the pool bottom or the eggs remain in the brood sac until the mother dies and sinks. When the pool dries out, so do the eggs (known as cysts when dry). They remain in the dry pool bed until rains and other environmental stimuli hatch them. Cysts can withstand heat, cold and prolonged desiccation. When the pools refill, some, but not all, of the cysts may hatch. The cyst bank in the soil may contain cysts from several years of breeding. Average time to maturity is only forty-one days. In warmer pools, it can be as little as eighteen (Eriksen & Belk 1999).

The vernal pool fairy shrimp is widespread but not abundant. Known populations extend from Shasta County through most of the length of the Central Valley to Tulare County. Along the central coast, they range from northern Solano County to Pinnacles National Monument in San Benito County. Four additional, disjunct populations exist in Southern California. The ephemeral wetlands that support this network of populations are remnants of what was formerly a pristine vernal pool ecosystem, which has been converted to primarily agricultural and urban uses.

No formal vernal pool surveys for federal listed branchiopods have been conducted on the Development Site. No branchiopods were observed in wetlands on the Development Site during unofficial site surveys. The closest known occurrence is on the adjacent property, approximately 500 feet southeast of the Development Site. Vernal pool fairy shrimp were identified in pools on the adjacent property in 2002 (Condor Country Consulting 2002). A record for this species is also located 1.6 miles west of the Development Site (Occurrence No. 353). Approximately 0.318-acre of seasonal wetlands on the Development Site support vernal pool flora and suitable hydrology that potentially could support vernal pool fairy shrimp. Accordingly, these pools provide suitable habitat for vernal pool fairy shrimp (suitable does not infer presence, only conditions that could support this species). Because of the presence of potentially suitable

habitat, the Development Project may affect vernal pool fairy shrimp. Please review Section 14 below for a complete discussion of Impacts and Mitigation for the vernal pool fairy shrimp.

10.2.3 VERNAL POOL TADPOLE SHRIMP

Vernal pool tadpole shrimp (*Lepidurus packardi*) was designated as threatened in its entire range on September 19, 1994 (Federal Register 59:48136-48153). Critical habitat for this species was originally designated on August 6, 2003 (Federal Register 68: 46683-46867), and the designation was revised August 11, 2005. Species by unit designations were published on February 10, 2006 (Federal Register 71:7117). *The Development Site is located outside of designated critical habitat for this species* (Figure 3).

The vernal pool tadpole shrimp is a small crustacean whose adults reach approximately 2 inches in length. Vernal pool tadpole shrimp require seasonally aquatic habitats that are wet for at least 7 weeks and dry in summer. They occur in a variety of natural and artificial seasonally inundated habitats including vernal pools, seasonal wetlands, alkaline pools, clay flats, vernal swales, stockponds, railroad right-of-way pools, roadside ditches, and road rut pools resulting from vehicular activity. Occupied pools and wetlands typically have highly turbid waters or aquatic vegetation that may provide shelter from predators. They also have been observed in clear waters. Tadpole shrimp climb or scramble over objects, as well as plowing along or within bottom sediments. Their diet consists of organic debris and living organisms, such as fairy shrimp and other invertebrates.

The life history of the vernal pool tadpole shrimp is linked to the seasonal cycle of the vernal pool. After winter rainwater fills the pool, the population is reestablished from cysts that lie dormant in the dry pool sediments. Sexually mature adults have been observed in vernal pools three to four weeks after the pools had been filled. Some cysts hatch immediately and the others remain dormant in the soil to hatch during later rainy seasons.

The vernal pool tadpole shrimp is known from 19 populations in the Central Valley, ranging from east of Redding in Shasta County south to the San Luis National Wildlife Refuge in Merced County, from a small population near the Napa County airport, and from a single vernal pool complex on the San Francisco Bay National Wildlife Refuge in the City of Fremont, Alameda County. The ephemeral wetlands that support this network of populations are remnants of what was formerly a pristine vernal pool ecosystem, but which has been converted to mainly agricultural and urban uses. This highly disturbed remnant habitat is imperiled by a variety of human-caused activities, primarily urban development, water supply and flood control projects, and agriculture. Rapid urbanization of the Central Valley of California currently poses the most severe threat to the continued existence of the listed vernal pool crustaceans.

The closest record for vernal pool tadpole shrimp is located 2 miles west of the Development Site (CNDDB Occurrence No. 177). The Development Site has not been surveyed using the USFWS' survey protocol (USFWS 1995) for fairy shrimp species. Seasonal wetlands on the Development Site are limited to relatively small pools that likely would not be used by tadpole shrimp. M&A biologists Mr. G. Monk carries a federal permit (i.e., a 10(a)(1)(A) permit) that allows him to conduct surveys for listed shrimp species. Mr. Monk has extensive experience with tadpole shrimp and believes the pools on the Development Site are too small and shallow to

constitute likely tadpole shrimp habitat. Accordingly, the project will not likely adversely affect the vernal pool tadpole shrimp. Please review Section 14 below for a complete discussion of Impacts and Mitigation for this species.

10.2.4 CALIFORNIA TIGER SALAMANDER

M&A has not conducted formal surveys for the California tiger salamander (*Ambystoma californiense*) on the Development Site. The USFWS listed the Central population (excluding Sonoma and Santa Barbara Counties) of the California tiger salamander (CTS) (69 Fed. Reg. 47212) on August 4, 2004, and designated Critical Habitat for the Central CTS in 2005 (70 Fed. Reg. 49380 (Aug. 23, 2005). *The Development Site is located outside of critical habitat designated for this species (Federal Register, Vol. 69, No 153, August 10, 2004) (Figure 3).*

In addition to being federally listed, CTS is also a California "species of special concern." This title affords the CTS no legally mandated protection; however, pursuant to CEQA (14 CCR §15380), this species must be considered in any project that will undergo, or is currently undergoing CEQA review, and/or any project that must obtain an environmental permit(s) from a public agency (e.g., the U.S. Army Corps of Engineers).

CTS occur in grasslands and open oak woodlands that provide suitable aestivation (that is, summer retreats) and/or breeding habitats. CTS spend the majority of their lives underground. They typically only emerge from their subterranean refugia for a few nights each year during the rainy season to migrate to breeding ponds. Recent studies have found that ninety-five percent of CTS spend the summer aestivating within 2,200 feet of their breeding ponds (Trenham and Shaffer, unpublished paper). As such, unobstructed migration corridors are an important component of CTS habitats. Stock ponds, seasonal wetlands, and deep vernal pools typically provide most of the breeding habitat used by CTS. In such locations, CTS attach their eggs to rooted, emergent vegetation, and other stable filamentous objects in the water column. In most of the northern range of the CTS, seasonal wetlands that are used for breeding typically must hold water into the month of May to allow enough time for larvae to fully metamorphose.

While the majority of CTS aestivate within 2,200 feet of their breeding ponds, USFWS considers suitable habitat within 1.3 miles of a known breeding pool to constitute potential upland habitat of this salamander. CTS are known to occur in grassland/oak savannah habitats contiguous with the Development Site, but not within 2,200 feet. CTS have been documented breeding in stock ponds approximately 0.5-mile (2,640 feet) west of the Development Site (CBDDB Record No. 854). This salamander is also known to occur 0.56 mile northwest of the Development Site (CNDDB Record No. 479) on the edge of development, and finally is known to occur 1.2 miles west of the Development Site (CNDDB Record No. 482).

Sand Creek on the Development Site provides a potential migration corridor for CTS to migrate from breeding habitats upstream to the Development Site.

A man-made linear drainage ditch on the eastern boundary of the Development Site provides potential breeding habitat for CTS. However, because the drainage feature is perennially wet, it likely does or will support the bullfrog (*Rana catesbeiana*), a known predator of CTS larvae. Thus, this feature poses a potential threat to any CTS population that may be in the vicinity of

the project. In addition, small seasonal wetlands on the Development Site, while likely too small to constitute CTS breeding habitat in years with normal levels of precipitation, conceivably could be used in wet years for breeding by CTS. The Development Site's grazed grassland supports California ground squirrel (*Spermophilus beechyi*) burrows which are necessary habitat components for CTS to over-summer. Thus, M&A regards the Development Site's uplands as suitable upland over-summering habitat that could be used by CTS.

The presence of CTS on the Development Site cannot be discounted because there is known CTS breeding habitat within 1.3 miles of the Development Site and there are upland and potentially suitable breeding habitats that could be used by CTS on the Development Site. *Accordingly, the project may affect the CTS.* However, because the Development Site is not within 2,200 feet of a known breeding site, any adverse impacts to the species would be minimal. Please review Section 14 below for a complete discussion of Impacts and Mitigation for this species.

10.2.5 CALIFORNIA RED-LEGGED FROG

M&A has observed the California red-legged frog (CRLF) (*Rana aurora draytonii*) on the Development Site in Sand Creek. This frog was federally listed as threatened on May 23, 1996 (Federal Register 61: 25813-25833) and as such is protected pursuant to the Federal Endangered Species Act. In November 2005, the USFWS adopted a revised Critical Habitat rule for the CRLF. *The Development Site is located outside of critical habitat for this species (Figure 3).*

The California red-legged frog is typically found in slow-flowing portions of perennial streams, and in ephemeral streams and hillside seeps that maintain pool environments or saturated soils throughout the summer months. Riparian vegetation such as willows (*Salix* spp.) and emergent vegetation such as cattails (*Typha* spp.) are preferred red-legged frog habitats, though not necessary for this species to be present. This frog is also found in ponds. Populations of California red-legged frog will be reduced in size or eliminated from ponds supporting non-native species such as bullfrogs (*Rana catesbeiana*), Centrarchid fish species (such as sunfish, blue gill, or large mouth bass), and signal and red swamp crayfish (*Pacifastacus leniusculus* and *Procambarus clarkii*, respectively), all are known California red-legged frog predators.

USFWS regards the reach of Sand Creek within the Development Site to constitute California red-legged frog habitat (G. Monk pers. comm. w/ Sheila Larsen February 14, 2005). M&A have corroborated this fact on numerous occasions. In 1998, several adult California red-legged frogs and many larvae were observed in small pools along a reach of Sand Creek approximately 3.2 miles upstream of the Development Site (CNDDB Occurrence Number 286). M&A observed this frog in Sand Creek immediately west of the Development Site alongside Deer Valley Road in 2005. Finally, M&A staff observed California red-legged frogs in Sand Creek within the Development Site on several occasions in 2005. Owing to the known records and the observations of California red-legged frogs in Sand Creek on the Development Site, the reach of Sand Creek within the Development Site is regarded as habitat that supports this frog.

A man-made linear ditch on the eastern Development Site boundary that drains into Sand Creek could be used by migrating frogs. However, because the drainage feature is perennially wet and may support the bullfrog, a known CRLF predator, the feature poses a potential threat to the CRLF population in the vicinity of the project.

The proposed project includes the installation of two outfall structures in Sand Creek that will be used for storm water discharge. Accordingly, the project may affect California red-legged frog. Construction of these outfall structures will require prior authorization from the USFWS. Please review Section 14 below for a complete discussion of Impacts and Mitigation for this species.

10.2.6 SAN JOAQUIN KIT FOX

San Joaquin kit fox (kit fox) (*Vulpes macrotis mutica*) is a federally listed endangered species and a California listed threatened species. This species' distribution is primarily limited to the San Joaquin Valley and adjacent regions. *The Development Site is not within designated critical habitat for the species, but a portion of the Development Site is located within CDFG mapped range of the San Joaquin kit fox (Figure 3).*

The San Joaquin kit fox is the smallest fox species in North America, typically weighing between four and six pounds. It has large ears, long legs, and is generally a buffy tan color with a black-tipped tail. Kit fox live primarily in the lowlands of the San Joaquin Valley of California, but are also known to occur in several counties in the coast mountain ranges including Santa Barbara, San Luis Obispo, Monterey, San Benito, Santa Clara, Contra Costa and Alameda Counties.

This fox species is usually found in open grassland and shrubland communities, but has also been observed in orchards that border grassland or shrubland plant communities. Kit fox are carnivorous, usually feeding on small rodents such as pocket mice (*Perognathus inornatus*), deer mice (*Peromyscus maniculatus*), western harvest mice (*Reithrodontomys megalotis*), kangaroo rats (*Dipodomys* spp.) and larger rodents such California ground squirrel. Kit fox also prey upon lagomorphs such as black-tailed hare and desert cottontail (*Sylvilagus audubonii*). It relies on dens for breeding, and to provide escape cover from potential predators. Kit fox are reputedly poor diggers, so dens are excavated in loose-textured soils, generally in areas with low to moderate relief, or they will utilize holes left by other species. They will utilize burrows dug by rabbits, ground squirrels, and on occasion, badgers (*Taxidea taxus*). Man-made structures, such as well-casings, culverts, and abandoned pipelines, are also occasionally used for dens. Typically, dens are small enough to discourage easy predation by coyotes. Populations of kit fox are thought to be related to the availability of denning sites, particularly natal denning sites, which are often moved several times throughout the season.

Formal protocol level surveys have not been conducted for the San Joaquin kit fox on the Development Site. However, M&A has extensive experience surveying for San Joaquin kit fox, and all burrows were checked for sign of kit fox during M&A's site reconnaissance. None of the burrows observed onsite was determined to be of the size or dimension that would constitute any kind of den as defined in the USFWS' survey guidelines (USFWS 1999). Additionally, no kit fox tracks or scat were observed on the Development Site. While M&A does not believe there are resident kit foxes on or near the Development Site, this species is transitory in the project area and thus no conclusions can be rendered regarding the use of the Development Site as migration habitat.

The Development Site lies within the Sand Creek Specific Plan area. Several reports prepared to support the *Sand Creek Specific Plan DEIR* (Mundie 2003) address potential San Joaquin kit fox presence in the project area, including: *San Joaquin Kit Fox Habitat Evaluation for the Sand Creek*

Specific Plan Area, Antioch, California (EDAW 1998), *San Joaquin Kit Fox Preliminary Report, Roddy Ranch Proposed Golf Course* (H.T. Harvey & Associates Ecological Consultants 1998), and *Distribution of the San Joaquin Kit Fox in the North Part of its Range* (H.T. Harvey & Associates Ecological Consultants 1997). These reports all indicate that San Joaquin kit fox is unlikely to be present in the vicinity of the Development Site. It is unlikely that the Development Project would have a substantial direct or cumulative effect on San Joaquin kit fox. Accordingly, M&A believes that the Development Project would not likely adversely affect San Joaquin kit fox.

The latest, closest San Joaquin kit fox record to the Development Site was recorded in 1995 approximately 2.6 miles to the northwest (CNDDB Record No. 21). The USFWS and CDFG have notified the applicant that it considers the Development Site to constitute habitat of the San Joaquin kit fox (personal communication Ms. Sheila Larsen and Ms. Janice Gan during a project team meeting on February 14, 2006). However, much of the surrounding area to the north and west has been developed since CDFG mapped the species' range. Accordingly, the project will not likely adversely affect San Joaquin kit fox. Please review Section 14 below for a complete discussion of Impacts and Mitigation for this species.

10.2.7 Potential Animal Impacts at the Offsite Mitigation Site

1.8 acres of disturbance will be associated with the construction of a wetland pond that will provide breeding habitat for both the California red-legged frog and the California tiger salamander.

11. SECTION 7 CONSULTATION

As the Development Project includes a proposal for a storm water outfall in Sand Creek, and there would be impacts to other seasonal wetlands on the Development Site, on behalf of the applicant, M&A has prepared a PCN and submitted it to the U.S. Army Corps of Engineers seeking authorization to use Nationwide Permits for the Development Project. Because the Development Project, including construction of a wetland pond at the Offsite Mitigation, may affect federal listed species, the Corps is required to consult with the USFWS pursuant to Section 7 of the FESA prior to the time it can issue a permit for the project. Any conditions stipulated in the USFWS's Biological Opinion (i.e., the de facto Incidental Take Permit) should be incorporated into the Corps's authorization to use Nationwide Permits for the proposed project.

12. DEVELOPMENT PROJECT IMPACTS SUMMARY

12.1 General Development Site Impacts

Sheet 1 shows the areas of impact for the Development Site. The area that would be disturbed by the Development Project both on and off site *will result in permanent impacts to 174.6 acres and temporary impacts to an additional 25.8 acres. Total permanent and temporary impacts at the Development Site would occur to 174.6 acres.* Below is a summary of the acreage of impacts and preserved areas both on and off the Development Site.

Summary of Project Impact and Preserve Acreages

	Acres
Impact Areas	
Permanent Impacts	
Development Site	149.9
Offsite Hillcrest Ave	3.0
Offsite Sand Creek Road (East)	7.6
Offsite Heidorn Ranch Road	8.2
Offsite Shell Property	2.2
Kaiser & School Access Road	0.8
Offsite Sand Creek Road (West)	2.9
Total Permanent Impacts	**174.6**
Temporary Impacts	
Heidorn Ranch Road construction easement	2.3
School Access Road	1.8
Total Temporary Impacts	**4.1**
Total Development Impacts	**178.7**
Ralph Property Mitigation Impacts (Beneficial Impacts)	**1.8**
Preserved Areas	
Onsite Open Space Preserve	34.4
Ralph Property-available acreage	166.6
Total Mitigation Acres	**201.0**

13. PROPOSED MITIGATION COMPENSATION

13.1 Sand Creek Open Space Preserve

In order to mitigate for impacts resulting from the Development Project, the applicant is proposing to preserve 34.4 acres as an Open Space Preserve at the south end of the Development Site, including 0.58 acres (2,092 linear feet) of Sand Creek. This Preserve will establish a permanently protected buffer along Sand Creek on the Development Site. The Preserve includes setbacks averaging 100 feet from the top-of-bank on both sides of Sand Creek. The development plan will include the transfer of the Open Space Preserve into a dedicated parcel. The applicant will retain fee title ownership of the Open Space parcel until a conservation easement is recorded, at which time the parcel will be fee title transferred to the City of Antioch. A conservation organization will provide management oversight of the property. The City will be funded to manage the property through the development's landscape and lighting district (LLD). Allowable and prohibited uses of the Open Space parcel are described in section 13.6 below.

It should be noted that the City of Antioch's General Plan shows Hillcrest Avenue extending southward over Sand Creek and through the Open Space Preserve, essentially bisecting the preserve. While unlikely to ever be constructed, a 4.7-acre area will be held out of the 39.1 acres

that encompass the Sand Creek Buffer and Open Space area to its south, to account for any future extension of Hillcrest Avenue. Thus, in total, 34.4 acres would be preserved as part of a Sand Creek preservation corridor on the Development Site.

13.2 Ralph Property Mitigation Site and Assessor Parcel Numbers

In addition to the Open Space Preserve, the applicant has purchased a 205.6-acre property known as the Ralph Property in eastern Contra Costa County, which will be used for additional off-site mitigation. The Ralph Property is located approximately two miles south of the Byron Airport, just outside the town of Byron in Eastern Contra Costa County, California (Figures 1 and 4). The approximately 205.6-acre property is composed of two parcels. The Assessor Parcel Numbers are: 001-031-018-3 (147.02 acres), and 001-031-019-1 (58.53 acres).

Per an agreement with CDFG in 2006, 39 acres of the 205.6-acre Ralph Property were previously designated as mitigation for impacts that occurred to the western burrowing owl at the applicant's Magnolia Development Project in Oakley (a different project). As mitigation compensation for the project discussed herein, the applicant shall donate the remaining 166.6 acres of the Ralph Property in fee title to a qualified conservation organization to mitigate impacts to waters of the U.S./State, and special-status species and their habitats from the Development Project.

In total the entire 205.6-acre Ralph Property would be fee title transferred to a qualified conservation organization perfecting the mitigation land preservation requirements for both the Development Project and the remaining recordation responsibilities for the Magnolia Development Project.

13.3 Ralph Property Setting and Biological Resources

The 205.6-acre Ralph Property is predominantly non-native annual grassland habitat that has never been developed in any manner; rather it has been used exclusively for rangeland throughout man's long history in the area. While there was an earlier proposal by another owner to construct warehouses on this site, the proposed project was never implemented (information from realtor that sold the Ralph Property to the applicant).

The Ralph Property supports a mosaic of wetland and special-status species habitats. While a formal plant inventory has not been completed, Table 5 provides a preliminary list of plants observed on the site. Similarly, Table 6 presents a list of wildlife species observed on the site. The Ralph Property supports more than 9 acres of alkaline vernal pool habitats. Two large alkali "lakes" are also present (Figure 5). In addition, a natural drainage traverses the western edge of the property. Vernal pools on the site also are known to support special-status plant and wildlife species.

13.3.1 General Vegetation

Non-native annual grasslands occur on the majority of the mitigation site. Dominant grass and forb species are non-native species such as ripgut grass (*Bromus diandrus*), soft chess (*Bromus hordeaceus*), red brome (*Bromus madritensis* spp. *rubens*), foxtail barley (*Hordeum murinum ssp. leporinum*), Italian ryegrass (*Lolium multiflorum*), filaree (*Erodium* spp.), short-podded

mustard (*Hirschfeldia incana*), California burclover (*Medicago polymorpha*), little hop clover (*Trifolium dubium*), and smooth cat's-ear (*Hypochaeris glabra*). Native species also occur in this plant community. Native species found in non-native annual grasslands within the mitigation site include harvest brodiaea (*Brodiaea terrestris* ssp. *terrestris*), linanthus (*Linanthus liniflorus*), little mousetail (*Myosurus minimus* ssp. *apus*), woolly bluecurls (*Trichostema lanatum*), blow-wives (*Achyrachaena mollis*), narrow-leaf milkweed (*Asclepias fascicularis*), California milkweed (*Asclepias californica*), common fiddleneck (*Amsinckia menziesii* var. *intermedia*), Great Valley gumweed (*Grindelia camporum* var. *camporum*) and turkey mullein (*Eremocarpus setigerus*).

The drainage channel on the mitigation site is dominated by salt grass (*Distichlis spicata*), alkali heath (*Frankenia salina*) and Mediterranean barley (*Hordeum marinum* ssp. *gussoneanum*). Other species associated with these seasonally-flooded drainages include toad rush (*Juncus bufonius*), sickle grass (*Parapholis incurva*), sand-spurrey (*Spergularia macrotheca* var. *longistyla*), alkali weed (*Cressa truxillensis*), and elongate plantain (*Plantago elongata*). Iodine bush (*Allenrolfea occidentalis*) occurs along the northernmost portion of the drainage. The wetter portion of the drainage at the southern end of the mitigation site supports brass buttons (*Cotula coronopifolia*), common monkeyflower (*Mimulus guttatus*) and common threesquare (*Schoenoplectus pungens*). A small population of the exotic invasive species, broad-leaf peppergrass (*Lepidium latifolium*), also occurs in this area. Common spikeweed (*Centromadia pungens* ssp. *pungens*) occurs along the upper margins of the drainages.

Alkali lakes on the mitigation site support a diverse flora of salt-tolerant species, including bush seepweed (*Suaeda moquinii*), alkali heath, ball saltbush (*Atriplex fruticulosa*), sandy pygmy-weed (*Crassula connata*), stickwort (*Spergula arvensis* ssp. *arvensis*), sand-spurrey, hyssop loosestrife (*Lythrum hyssopifolium*), rusty popcornflower (*Plagiobothrys nothofulvus*), and veiny peppergrass (*Lepidium dictyotum*), among others. Upper margins of the lakes include Vasey's coyote-thistle (*Eryngium vaseyi*), goldfields (*Lasthenia californica*) and common spikeweed.

13.3.2 Special-Status Plants

One special-status plant species, brittlescale (*Atriplex depressa*) was observed in the alkali lakebeds. Brittlescale is a CNPS List 1B.2 species. List 1B.2 species are fairly endangered in California, where 20-80% occurrences are threatened. It is known to occur in the East Bay in the Byron Hot Springs area and the Los Vaqueros watershed (Ertter 1997). Notably, Lastarriaea (*Lastarriaea coriacea*) was also identified on the mitigation site. *This species has not been documented in the area since 1889 and is an extension of its currently known range.*

13.3.3 Special-Status Wildlife

On January 9, 2006 Mr. L. Host at the USFWS Sacramento Endangered Species Office approved a formal fairy shrimp survey request submitted by M&A under a federal permit (Permit No. TE-776608) that M&A carries from USFWS. During formal fairy shrimp surveys, M&A identified four species of fairy shrimp in vernal pools on the Ralph Property: vernal pool fairy shrimp (*Branchinecta lynchi*), Lindahl's fairy shrimp (*Branchinecta lindahli*), midvalley fairy shrimp (*Branchinecta mesovallensis*), and alkali fairy shrimp (*Branchinecta mackini*). *Branchinecta lynchi,* a federally listed threatened species, was identified in two separate areas on the property.

These populations are mapped in Figure 5. While *B. mesovallensis* is not a federally listed species, it is regarded as sensitive. As required by the terms and conditions of M&A's 10(a)(1)(A) permit that allows Mr. G. Monk and Ms. S. Lynch to conduct fairy shrimp surveys, a formal survey report was submitted to Mr. Larry Host at the USFWS on October 3, 2006.

Other sensitive resources are also known from the Ralph Property. On April 7, 2005 M&A biologists Mr. G. Monk and Mr. G. Thomas observed numerous California tiger salamander larvae in one of the large, alkali lakes on the property confirming the presence of this species on the site. This corroborates a CNDDB record (No. 206) from 1994 that reports California tiger salamander in a stock pond located immediately southeast of the Ralph Property (Figure 5).

While the California red-legged frog is not known to occur on the Ralph Property, it is known from a tributary that terminates on the Ralph Property. The CNDDB (Record No. 263) indicates that this frog was observed in a drainage that enters the Ralph Property on the southwest corner (Figure 5). The CNDDB record is located approximately 1,000 feet upstream from the Ralph Property. This tributary drains into an alkali sink on the mitigation site that has created conditions for seasonal wetlands.

While there is no perennial water on the mitigation site, owing to the termination of the tributary that is known to support California red-legged frogs, a breeding pond is proposed to be constructed on the site that would provide near permanent water and that likely would be colonized by this frog species. There is a distinct absence of suitable California red-legged frog habitat on the Ralph Property; thus, creation of breeding habitat for this frog would increase the stability of populations of this frog in the area.

Looking at the hydrology of nearby tributaries which are all intermittent or ephemeral, and looking at the ephemeral nature of all the ponds in the vicinity of the Ralph Property, the limiting factor for promotion of a stable California red-legged frog population is breeding habitat. The creation of a permanent seasonal wetland that could be drained as necessary to control predators, and that very likely would be used by breeding California red-legged frogs, would provide an opportunity for this frog to become more firmly established in the local area. As the applicant will be impacting 0.318-acre of seasonal wetlands on the Development Site, wetland mitigation compensation will be required by the Corps and the RWQCB. This mitigation requirement will be met by creation of a 1.03-acre seasonal pond and associated seasonal wetlands that would support breeding California red-legged frogs on the Ralph Property (see Mitigation prescription below).

Finally, while not federally listed, M&A has confirmed at least 3 pairs of year round resident western burrowing owls on the Ralph Property over a 2 year period. These owls were observed in the fall of 2005, in the breeding season of 2006, and most recently in the non-breeding season in January 2007. Western burrowing owls are firmly established on the Ralph Property.

13.4 Proposed Ralph Property Mitigation Pond

Mitigation for permanent impacts to waters of the U.S. on the Development Site will be accomplished through the construction of a 0.91-acre seasonal pond on the Ralph Property. The

constructed pond would also constitute replacement California red-legged frog breeding habitat. Finally, it would without doubt be used for breeding by CTS which are already known to breed on the Ralph Property. The mitigation pond would be built by constructing a 7-foot berm along an ephemeral stream channel on the mitigation site (Figure 6). Water flowing through the channel would be diverted by the berm into an excavated pond east of the channel. The excavation will be in dry land. The pond will be fitted with a drain at its lowest point to remove water as necessary to control California red-legged frog predators. Water would drain through an 8-inch outlet pipe onto the berm spillway.

Construction of the mitigation pond would result in the impact of 0.023 acre (85 linear feet) of channel at the location where the berm will be built. Construction of the pond would also result in 1.8 acres of impacts to dry land, resulting in the creation of 0.91 acre of new waters of the United States within the pond.

13.5 Total Proposed Mitigation Lands Compensation

In total, the applicant will preserve in perpetuity 201 acres of open space to compensate for impacts to special-status species that would occur at the Development Site. In review, total permanent and temporary impacts at the Development Site would occur to 178.7 acres. While there would be an additional 2 acres of impacts at the Ralph Property to construct a pond that will be used by CTS and CRLF, the impacts are regarded as temporary and beneficial.

The proposed mitigation is believed to be more than adequate to offset project impacts at the Development Site. Please note that land at the Development Site has been under agricultural production at least since 1957. Thus, relative to the Ralph Property, the value of the Development Site to sensitive species is relatively low. Most importantly, with the exception of the CRLF that are known in Sand Creek on the Development Site, no other federal listed species are known to occur on this site. In contrast, the Ralph Property is known to support the federal listed vernal pool fairy shrimp and the federal listed CTS. Finally, while not present on the Ralph Property, the CRLF is known upstream of this property in a tributary that terminates on the Ralph Property. Finally the extent of existing and proposed development around the Development Site must be taken into consideration. The Development Site is now surrounded on two sides by existing development and has proposed development on the other two sides. The City of Antioch General Plan and the City of Brentwood General Plan show all areas around the Development Site as slated for development. The Development site without doubt will be surrounded by development in a matter of a few short years. In short, the Development Site is now partially isolated by existing development and in short order will be completely isolated from any functional use by federal listed species. In contrast the Ralph Property is located in wide open range land that will not be developed soon or perhaps ever. This property has never been cropped, has not been affected by wind energy production, and is replete with known occurrences of sensitive species and habitats.

In contrast to the proposed Development Site, the Ralph Property mitigation site has very high value to listed species both that have been observed on the site and/or that are known from the immediate areas around the site (see next section of report). The Ralph Property is located just outside the 2,000 feet protection zone established around the Byron Airport and so will be a part

of a much larger preservation complex with regional importance as identified in the East Contra Costa County Habitat Conservation Plan and Natural Community Preservation Plan (HCP). The HCP indicates in: *Figure 5-4 Byron Airport and Preservation Program Alternative* that there are already areas adjacent to the Ralph Property that are preserved in perpetuity and managed for resource values (816 acres in airport; 121 acre in private mitigation bank). The Ralph Property is immediately outside the indicated preserved areas and thus has regional significance as a property that can be added to existing preserved areas.

The HCP, *Figure 5-2 Acquisition Priorities with Initial Development Area,* indicates that the Ralph Property is slated for a "higher level of Acquisition Effort," the highest category for land acquisition and preservation goals in the HCP. In contrast the Development Site is designated in the HCP for "Development Land Uses."

It should also be noted that the Ralph Property is within mapped vernal pool fairy shrimp critical habitat and within the mapped range of the San Joaquin kit fox (Figure 3). In contrast, the Development Site is partially within CDFG's mapped range of the San Joaquin kit fox. Thus, without doubt the Ralph Property is of great regional significance as a preserve while as indicated in the HCP, it is a foregone conclusion that the Development Site will be developed. In summary, the use of the Ralph Property as a mitigation site will ensure the long-term viability of habitat for vernal pool fairy shrimp, California tiger salamander, California red-legged frog, western burrowing owl, and San Joaquin kit fox.

From a species richness perspective, and a comparative analysis of the value of the Development Site and the Ralph Property to special-status species, there is no valid comparison. Accordingly, the mitigation proposal that includes fee title of the 205.6 acre Ralph Property to a qualified conservation organization is a valid mitigation compensation offer.

13.6 Methods of Land Preservation

The applicant will retain fee title ownership of the 34.4-acre Open Space Preserve until a conservation easement is recorded, at which time it will be fee title transferred to the City of Antioch. The City will be funded to manage the property through the development's landscape and lighting district (LLD). A conservation organization will provide management oversight of the property. Conditions for management of the Open Space Preserve and the allowed and prohibited uses (described below) will be recorded in the conservation easement, thus guaranteeing that these conditions will persist in perpetuity.

In addition, deed restrictions will also be recorded against the 205.6 acres of the Ralph Property, and fee title will be donated to a conservation organization. The conservation organization that takes ownership of the Ralph Property will also be provided with a cash endowment, the interest from which will be used to manage or otherwise manage the Ralph Property for its conservation values in perpetuity. A Conservation Management Plan for the Ralph Property has been prepared that will become a part of the conservation easement deed recorded over this property. This plan is included in this Biological Assessment as Appendix A.

13.6.1 ALLOWED USES OF THE OPEN SPACE PRESERVE

The following uses and practices will be permitted on the Open Space Preserve under the conservation easement. They are not to be precluded, prevented, or limited by the easement, provided that all applicable governmental permits are properly obtained. All allowed and prohibited uses shall be made a condition of the Conditions, Covenants and Restrictions (CC&Rs) that the residents agree to when they purchase a home and will also be recorded as part of the Final Subdivision Map.

- A pedestrian trail shall be constructed along the northern edge of the Open Space Preserve. A wood wire view fence will be maintained in perpetuity along the edge of the pedestrian trail to separate it from the creek channel.

- Grazing shall be allowed, but will be monitored and managed. The desired condition is as a short-grass preserve. This can be achieved by moderate grazing pressure.

- Access to the Open Space Preserve shall be limited to the Conservator or its agent for occasional maintenance activities associated with ranching including and the distribution and collection of farm animals; for management and maintenance of the site in its naturalized condition; or for scientific study purposes.

- State and federal resource agencies shall have access with adequate (24 hours) notice to the Conservator for the purpose of inspecting the site's natural resources and monitoring the status and effectiveness of management practices.

- The Conservator may access the Open Space Preserve as necessary to manage and otherwise maintain the site in its naturalized condition.

- The Conservator may grant permission to parties to access the Open Space Preserve for scientific study purposes only.

- Existing pipelines and easements may continue to be maintained.

- Existing structures, fences, ditches, pumps, and other improvements may be maintained and repaired.

- Feral horses or horses that have been retired from active human use are allowed to graze on the Open Space Preserve.

- The Open Space Preserve may be used for the conservation of wildlife or plant habitat including the development or maintenance of wetland areas.

13.6.2 PROHIBITED USES OF THE OPEN SPACE PRESERVE

The following activities and uses are expressly prohibited on the Open Space Preserve:

- The legal or de facto subdivision or use of the Open Space Preserve including, but not limited to, any such subdivisions or establishment of separate legal parcels by (i) certificates of compliance or (ii) lot line adjustments.

- The placement or construction of any buildings, structures, or other improvements of any kind, other than those described in the allowed uses above (including, without limitation, fences, roads, parking lots, mobile homes, wind turbines, antennas, maintenance or other buildings).

- Any agricultural, commercial, residential or industrial use or activity except for grazing.

- Any recreational use or activity.

- Any use of chemicals including insecticides, rodenticides, and fertilizers. The Conservator may, with approval from the Department of Fish and Game, use herbicides to control noxious weeds to benefit western burrowing owls and/or other native California flora/fauna.

- Any use as horse pasture if owners would be frequently accessing the site to ride, train, or otherwise entertain use of boarded horses (i.e., no horse boarding allowed).

- Any use by dogs or other pets.

- The placement of any signs or billboards except to control unauthorized entry or use or to post notice of the Easement.

- The installation of new, or the extension of existing utilities including, without limitation, water, sewer, power, fuel, and communication lines and related facilities.

- The operation of any motorized vehicle for any purpose, except for emergency use, fire control, or for maintenance, repair and restoration of the Open Space Preserve permitted facilities.

- The pruning, felling, or other destruction or removal of dead or living native trees and shrubs or other native vegetation, except as necessary to control or prevent hazards, disease, or fire.

- Any alteration of the surface of the land, including, without limitation, the excavation or removal of soil, sand, gravel, rock, peat, or sod.

- Mining, drilling, exploration for, or extraction of minerals, hydrocarbons, steam, soils, or other materials on or below the surface.

- Any use or activity that causes or is likely to cause soil degradation or erosion, or pollution of any surface or subsurface waters.

- The dumping or other disposal of wastes, refuse, and/or debris.

14. LISTED SPECIES AVOIDANCE PLAN

This section provides protection and avoidance measures that will be taken to minimize impacts to state and federal listed animal species that may be adversely affected by the Development Project. Because special-status wildlife species are known to occur on the Ralph Property mitigation site, preconstruction surveys and other avoidance measures will be implemented to avoid injury to individual animals that may be in the areas affected by wetland construction. All surveys will be conducted according to accepted agency protocols. Mitigation compensation for impacts to listed species is discussed in a subsequent section of this BA.

14.1 Vernal Pool Invertebrates

14.1.1 DEVELOPMENT SITE

The Development Site supports 0.318-acre of seasonal wetlands that provide suitable habitat for vernal pool fairy shrimp. Because pools are too small and shallow, they likely would not support the vernal pool tadpole shrimp. Regardless, in the absence of formal surveys, impacts to these species must be considered. Construction schedules and procedures should be adjusted to minimize impacts to vernal pool crustaceans. Development Site grading should occur during the summer months (June to October) when suitable habitat for vernal pool fairy shrimp and vernal pool tadpole shrimp (i.e., seasonal wetlands and topographic lows) are dry and vernal pool crustaceans would only be present as cysts. Prior to filling these wetlands, the topsoil of the wetlands will be scalped and redeposited in appropriate seasonal mitigation wetlands that will be created within the wetland mitigation pond on the Ralph Property (see Section 13), thereby potentially inoculating the mitigation wetlands with vernal pool fairy shrimp/tadpole shrimp cysts if they occur on the Development Site.

14.1.2 RALPH PROPERTY MITIGATION SITE

Vernal pool invertebrates would not be affected by the proposed mitigation project on the Ralph Property. Grading would occur during the summer months (May to October) when suitable habitat for vernal pool fairy shrimp and vernal pool tadpole shrimp are dry and vernal pool crustaceans would only be present as cysts. As a precaution, orange construction fencing would be installed around the vernal pool immediately to the north of the mitigation project to prevent construction equipment from entering.

14.2 California Tiger Salamander

14.2.1 DEVELOPMENT SITE

To avoid and minimize potential impacts to CTS, an employee training program for operators/contractors will be conducted by a qualified biologist to explain the endangered species concerns at the Development Site prior to ground disturbance. Site grading will be conducted during the summer months when California tiger salamanders would not be breeding or migrating, which will reduce potential impacts to potential breeding sites. California tiger salamanders could, however, be in burrows that would be impacted by site grading and could

end up in trenches excavated during project construction. Because the nearest breeding site is more than 2,200 feet from the Development Site, the number of salamanders potentially using the areas that will be graded would be expected to be very low. A biologist will be onsite during site grading to salvage any California tiger salamanders. Any salvaged California tiger salamander would be turned over to CDFG personnel for relocation, or the relocation of the CTS could be handled by a 10(a)(1)(A) permitted biologist as approved and directed by the USFWS and CDFG.

Best Management Practices will also be implemented to minimize the potential mortality, injury or other impacts to California tiger salamanders. Any installed erosion control materials will not include small-mesh plastic netting, which could result in entanglement within the material and death of California tiger salamanders. All trash items will be removed from the Development Site to reduce the potential for attracting predators of California tiger salamanders, such as crows and ravens which could scavenge uncovered salamanders.

14.2.2 RALPH PROPERTY MITIGATION SITE

No potential California tiger salamander breeding habitats would be affected by the mitigation project on the Ralph Property. However, burrows of the California ground squirrel occur at and around the pond location and could provide summer retreat habitat. Although impacts to California tiger salamander summer retreat habitat are expected to be minimal, they should be anticipated. There is no effective salvage method for saving any salamanders that may occur in the excavation area.

14.3 California Red-Legged Frog

14.3.1 DEVELOPMENT SITE

The California red-legged frog is known to occur in Sand Creek on the Development Site. An education program will be conducted by a qualified biologist to explain the endangered species concerns to contractors/operators working at the Development Site. This education/training program will include a description of the frog and its habitat, a review of the Endangered Species Act and the federal listing of the frog, the general protection measures to be implemented to protect the frog and minimize take, and a delineation of the limits of the work area.

To avoid disturbance to California red-legged frogs to the greatest extent practicable, any construction-related activity that is within 300 feet of a tributary shall occur in the summer months when this frog is expected to be in the aquatic environs of Sand Creek and not in burrows adjacent to this creek as often occurs during periods of high flows. The applicant will implement avoidance measures. These measures include isolating the work area with suitable amphibian exclusion fencing (see below) that would block the movement of California red-legged frogs from entering the work area. This fence would be installed prior to the time any site grading or other construction-related activities were implemented. The fence would remain in place during site grading or other construction-related activities and would prevent frogs from entering the Development Site work areas.

California red-legged frog exclusion fencing will consist of a 4-foot wall of ¼-inch mesh, galvanized wire (*i.e.,* hardware cloth). Initially, staking would be installed along the route of the exclusion fencing in a 4 inch deep trench. Then, the bottom of the fence would be firmly seated in the trench. The fencing above the ground would be anchored to metal staking with wire. Finally, the top 10-inches or less would be bent over in a semi-circle towards the outside of the fence to ensure that the fence cannot be climbed.

A qualified biologist will be onsite during grading activities to conduct daily inspections of the fencing and to otherwise ensure that stranded animals are salvaged and relocated back to the stream channel. The biological monitor will be responsible for ensuring that the frog fencing is not compromised, and shall notify both the onsite contractor and supervisor when fencing needs to be repaired.

All trash that might attract predators to the Development Site will be properly contained and removed from the site and disposed of regularly. All construction debris and trash will be removed from the site when construction activities are complete. All fueling and maintenance of equipment and vehicles, and staging areas will be at least 20 meters from Sand Creek or the unnamed drainage ditch. The construction personnel will ensure that contamination of California red-legged frog habitat does not occur and will have a plan to promptly address any accidental spills.

14.3.2 Ralph Property Mitigation Site

The ephemeral stream channel that would be affected by the mitigation project on the Ralph Property is a small channel that normally would be dry by April. Work will not begin until after the tributary is dry. Consequently, because the channel will be dry, and because current cover is limited to herbaceous species in these channels, it is M&A's expectation that California red-legged frogs, if present, will have moved from the mitigation area to upstream perennially wet springs, seeps, and ponds. We do not believe the mitigation project will result in incidental take of the California red-legged frog. As a precaution, preconstruction nocturnal surveys would be conducted a minimum of 24 hours in advance of construction related activities. In the event a California red-legged frog is found, it would be moved to the southern portion of the drainage on the Ralph Property.

14.4 San Joaquin Kit Fox

14.4.1 Development Site

Even though there are no resident kit foxes on or near the Development Site and access to the Development Site has been impeded by recent development to the north and the east of the property, the site contains potentially suitable foraging and migration habitat. The applicant will implement standard avoidance measures to further reduce the possibility of impacts to the species. An education program will be conducted by a qualified biologist to explain the endangered species concerns to contractors working at the Development Site. The program will include an explanation of the Federal Endangered Species Act and any endangered species concerns in the area. Qualified biologists would then conduct preconstruction den surveys no more than 30 days prior to site grading to ensure that potential kit fox dens are not disrupted. If

"potential dens" are located, infrared camera stations will be set up and maintained for 3 consecutive nights at den openings prior to initiation of grading activities to determine the status of the potential dens. If no kit fox is found to be using the den, site grading can proceed unhindered. However, if a kit fox is found using a den site within the Development Site area the USFWS will be notified at once, and all Development Site construction activities will be halted.

To prevent harm to San Joaquin kit fox, any steep-walled holes and/or trenches excavated on the Development Site will be completely covered at the end of each workday, or escape ramps will be provided to allow any entrapped animals to escape unharmed. All pipe sections stored at the Development Site overnight that are four inches in diameter or greater will be inspected for San Joaquin kit fox before the pipes are moved or buried. If San Joaquin kit fox are identified in the work area at any time, the USFWS and/or CDFG will be notified and consulted before work activities resume. All trash items will be removed from the site to reduce the potential for attracting predators of San Joaquin kit fox. Contractors will be prohibited from bringing firearms and pets to the job site.

14.4.2 RALPH PROPERTY MITIGATION SITE

Preconstruction surveys for kit fox would be conducted over the areas that would be impacted by pond construction on the Ralph Property. Details for such surveys would be as determined by USFWS and CDFG in incidental take permits acquired by the applicant for impacts to kit fox, and would include the following measures. Surveys would commence within 30 days of the disturbance initiation date.

Within 30 days of any earth moving activities in the enhancement area, M&A biologists will conduct den surveys. Camera stations will be placed on all potential dens. If any den is found that is in use by San Joaquin kit fox, M&A will immediately notify CDFG and USFWS. No further actions would occur without authorization from CDFG and USFWS. At that time, providing it is not a natal den, passive eviction procedures would be implemented. These measures would include installing one-way eviction doors on any den in use over a 48-hour period. Any natal or pupping dens would be protected with 500-foot buffers until such time that pups are mobile and able to vacate the site on their own. All biologist management actions would be pre-coordinated with CDFG and USFWS prior to implementing any management action.

15. IMPACTS AND MITIGATION ANALYSIS

15.1 Impacts to Potential Vernal Pool Habitat

The Development Site has a long history dating to at least 1957 of being planted to wheat. Regardless, the site supports 0.318-acre of seasonal wetlands that are regarded as potentially suitable vernal pool fairy shrimp and vernal pool tadpole shrimp habitat. These seasonal wetlands would be removed by the proposed development project. However, these impacts would be unlikely to jeopardize the continued existence of listed shrimp species.

15.2 Mitigation for Impacts to Potential Vernal Pool Fairy Shrimp Habitat

Impacts to potential fairy shrimp habitat will be offset through preservation and perpetual management of vernal pools known to support at least four species of fairy shrimp on the Ralph

Property. Impacts to 0.318-acre of suitable fairy shrimp habitat on the Development Site shall be mitigated on the Ralph Property by preserving in perpetuity over 9 acres of vernal pools known to support four species of fairy shrimp. This property is within federally designated critical habitat for the vernal pool fairy shrimp while the Development Site is not designated as critical habitat for this species.

In the winter of 2006, M&A conducted wet season protocol surveys for federally-listed vernal pool crustaceans on the Ralph Property. These surveys confirmed that the Ralph Property sustains four fairy shrimp populations. Fairy shrimp species found on the Ralph Property are vernal pool fairy shrimp (*Branchinecta lynchi*), Lindahl's fairy shrimp (*Branchinecta lindahli*), Midvalley fairy shrimp (*Branchinecta mesovallensis*), and alkali fairy shrimp (*Branchinecta mackini*). *Branchinecta lynchi,* a federally listed threatened species, was identified in two separate areas on the property. While *B. mesovallensis* is not a federally listed species, it is regarded as sensitive. Figure 5 maps the locations of these species on the Ralph Property.

The Ralph Property shall be permanently protected and managed to the benefit of special-status plant and animal species, and wetlands, as described in Section 13.6 the Mitigation and Monitoring Plan and the Ralph Property Management Plan. It should be noted that the entire 166.6 acres is not exclusively required to mitigate impacts to federally listed vernal pool crustaceans. The 166.6-acre preserve shall be used in part to mitigate potential impacts to federally-listed vernal pool crustaceans. The permanent preservation of approximately 9 acres of mixed vernal pool habitats on the Ralph Property would more than offset potential impacts to 0.318-acre of suitable listed vernal pool species habitat on the Development Site.

15.3 Impacts to California Tiger Salamander

The Development Site's non-native annual grassland habitat, with California ground squirrel burrows, provides suitable upland over-summering habitat for CTS. In total, 174.6 acres of suitable CTS upland habitat would be disturbed and/or permanently modified on the Development Site. Low quality but potentially suitable breeding habitat consisting of 0.318 acre of seasonal wetlands that do not pond long enough to support salamander breeding every year, and a man-made linear drainage ditch also would be impacted by the project, although the ditch poses a potential threat to the CTS population because it provides breeding habitat for the bullfrog, a known predator of the salamander. These impacts would be unlikely to jeopardize the continued existence of this species.

15.4 Mitigation Measure for Impacts to California Tiger Salamander

Impacts to potential CTS habitat will be offset through preservation and perpetual management of upland and breeding habitat that is known to support this salamander. The applicant is proposing to preserve high quality, confirmed occupied CTS habitat to mitigate for impacts to low quality (unconfirmed) CTS habitat consisting of ruderal to non-native annual grassland that has been used since 1957 for hay production. Additionally, removing the linear drainage ditch will benefit the CTS population in the project vicinity by eliminating breeding habitat for a predator of the species.

The proposed project includes dedicating 34.4 acres of Open Space Preserve at the south end of the Development Site, as described in Section 13.6. As this Preserve is considered suitable CTS habitat within the Development Site, its dedication will constitute preservation of suitable CTS upland habitat, similar to that being impacted by the proposed project. This areas is also closest to the nearest known CTS occurrences. In addition, a total of 166.6 acres of the Ralph Property shall be permanently preserved as described in Section 13.6. The Ralph Property supports known occupied breeding and upland habitat for CTS. Approximately 9 acres of mixed vernal pool habitats occur on the Ralph Property. CTS have been confirmed breeding on the site by M&A on April 7, 2005 when many larvae were observed in a large alkali "lake" on the site. The wetland mitigation plan that will be implemented on the Ralph Property also includes the construction of a seasonal pond that without doubt will eventually support breeding CTS. In addition, CTS are known to breed in a farm pond located immediately southeast of the Ralph Property on the west side of the California Aqueduct (see Figure 5) (CNDDB Occurrence No. 206). The Ralph Property will be perpetually managed for the benefit of the CTS and other listed species, as described in the Mitigation and Monitoring Plan and the Ralph Property Management Plan.

It is important to note that CTS have never been confirmed breeding or occupying the Development Site, a site that has been farmed every few years since at least 1957. Accordingly, the Ralph Property, which has never been disturbed except for cattle operations, has significantly greater value to CTS that does the Development Site. Preservation and perpetual management of 200.5 acres of onsite and offsite lands that constitute both suitable and known occupied CTS habitats offsets Development Site impacts to CTS.

15.5 Impacts to California Red-Legged Frog

Construction of the two outfall structures in Sand Creek will result in impacts to *0.025-acre of CRLF aquatic habitat in the Sand Creek channel.* The project will also remove the man-made linear ditch that provides suitable breeding habitat for CRLF but also provides breeding habitat for the bullfrog, a known predator for the frog. The ditch was constructed by a developer as part of the housing development north of the Development Site as a temporary feature. These impacts to aquatic sources on the Development Site would be unlikely to jeopardize the continued existence of the CRLF.

15.6 Mitigation Measure for Impacts to California Red-Legged Frog

Impacts to California red-legged frog habitat will be offset through preservation and/or enhancement of breeding habitat on the Ralph Property. Impacts to California red-legged frog breeding habitat on the Development Site is calculated as follows. A total of 0.025-acre of impacts will occur to the Sand Creek channel from installation of the two outfall structures. In addition, approximately 0.86 acre of a linear drainage feature on the eastern project boundary constitutes the potential breeding habitat. However, the drainage feature is perennially wet and could or does support the bullfrog, a known predator of CRLF. Removing the linear drainage feature will benefit the CRLF population in the project vicinity by eliminating breeding habitat for a predator of the species.

In addition, the applicant shall create 0.91 acre of new potential breeding habitat on the Ralph Property mitigation site by constructing a berm across an intermittent drainage feature that

terminates on this property. Off-channel seasonal wetlands would be constructed as necessary. Figure 6 illustrates the proposed breeding habitat. It is expected that CRLF would colonize this breeding site, given the fact that CRLF are known to occur immediately south of the Ralph Property in the same drainage as the proposed breeding habitat (see Figure 5) (CNDDB Occurrence No. 263).

The existing 0.86-acre man-made ditch will be removed from the Development Site and two new water quality basins (2) will be constructed on the Development Site (in part to replace the removed drainage feature). Unlike the existing drainage feature, the newly constructed basins will be designed to have positive drainage at all times. Thus, these features will not provide habitat for predators of the CRLF. The existing drainage ditch remains perennially inundated and thus can or already does support predators of the California red-legged frog such as the bullfrog. The replacement of the existing drainage feature with two water quality basins is a site enhancement that will promote a stable California red-legged frog population in Sand Creek. Thus, the loss of this linear feature would not be considered an impact to CRLF breeding habitat. Regardless, the CRLF breeding pond that will be constructed on the Ralph Property more than compensates for the loss of aquatic habitats on the Development Site.

It should be noted that the permanent protection of the Sand Creek corridor on the Development Site in a 34.4-acre Preserve constitutes permanent protection of California red-legged frog habitat. In addition, the 166.6 acres that will be preserved on the Ralph Property likely constitutes migration habitat for this frog. Preservation of the on- and offsite mitigation properties is discussed in Section 13.6, and perpetual management requirements are described in the Mitigation and Monitoring Plan and the Ralph Property Management Plan. *In total, 201 acres of upland habitat that could constitute California red-legged frog migration and breeding habitat will be preserved and managed in perpetuity as part of the proposed project, and breeding habitat will be created within the offset property. These measures more than offset project impacts to the California red-legged frog.*

15.7 Impacts to San Joaquin Kit Fox Habitat

The Development Site's open grassland habitat could provide potential foraging and migration habitat for the San Joaquin kit fox (SJKF). The Development Site is partially within CDFG's mapped range of the SJKF (CNDDB 2007), but access to the site has been impeded by development to the north and the west of the property. While the site has been sporadically dry farmed since 1957, it has been fallow for several years. Implementation of the proposed project will result in disturbance to or permanent modification of 174.6 acres of San Joaquin kit fox dispersal habitat. M&A has never observed any potential SJKF dens on the Development Site after numerous thorough surveys and thus do not believe that this fox resides on the Development Site. Regardless, this acreage is considered suitable for use by San Joaquin kit fox by the CDFG and USFWS (pers. comm. between Ms. Sheila Larsen and applicant; February 14, 2006). Regardless, impacts from the Development Project would be unlikely to jeopardize the continued existence of this species.

15.8 Mitigation Measure for Impacts to San Joaquin Kit Fox Habitat

The applicant is proposing to mitigate potential SJKF impacts on the Development Site by preserving high quality SJKF (relatively undisturbed grassland habitat) on the Ralph Property mitigation site. Low quality SJKF habitat (disked agricultural fields, on the fringe of the mapped kit fox range, and partially surrounded by urban development) occurs on the Development Site. Section 14.5 above discusses the very high resource value of the mitigation habitat of the Ralph Property relative to the much lower value of the impacted habitat on the Development Site.

The proposed project includes dedicating 34.4 acres of the Development Site as a permanent Open Space Preserve. Just as the Development Site constitutes suitable SJKF habitat, so does this Preserve. This Preserve also will protect a wildlife dispersal corridor along the Sand Creek corridor in perpetuity. A total of 166.6 acres of the Ralph Property will also be preserved and managed as part of the project in perpetuity. The Ralph Property preserve is within CDFG's mapped range of the SJKF. Preservation of the on- and offsite mitigation properties is discussed in Section 13.6, and perpetual management requirements are described in the Mitigation and Monitoring Plan and the Ralph Property Management Plan. In total, 201 acres of suitable SJKF habitat would be preserved and managed by the applicant to offset project impacts to suitable SJKF habitat.

16. SCHEDULE FOR DEDICATION OF PRESERVED LANDS, ALLOWABLE USES, AND ANNUAL MONITORING

The 34.4-acre Sand Creek Open Space Preserve shall be recorded on the Development Site Final Map. A permanent deed restriction shall be recorded over this preserved land within one year of breaking ground at the Development Site. Proof of the recordation of the deed restriction shall be provided to the USFWS upon the recordation of the deed. Permanent funds for the maintenance and annual monitoring of the Onsite Preserve shall be provided from an LLD. An HOA shall manage the preserve.

The 205.6-acre Ralph Property shall be fee title transferred to a qualified conservation organization within a year of breaking ground on the Development Site. An operational, non-wasting endowment shall be provided to the conservator for maintenance and annual monitoring of the Ralph Property. If found acceptable to the conservation organization and USFWS, permanent funding for management, maintenance, and monitoring of the Ralph Property may be provided through a permanent maintenance district established for the proposed development project.

A Management Plan has been prepared for the Ralph Property and shall become a part of the conservation easement deed recorded over this property. A similar management plan shall be prepared for the Onsite Preserve and will be recorded as part of the Final Map. These plans shall detail allowable uses, prohibited uses, and annual monitoring requirements that include at a minimum annual grazing monitoring on the Ralph Property. On the Ralph Property, initially a minimum of five years of "intensive monitoring" shall be the responsibility of the applicant and shall include grazing and wetland creation/enhancement monitoring. Upon notification from the Corps and RWQCB that mitigation wetlands meet their success criteria, all annual monitoring would become the responsibility of the conservator. This "long-term" monitoring would be far

less intensive than the first five years of monitoring completed by the applicant. Such annual monitoring would be limited to occasional site visits to monitor land use, fence condition, and operational maintenance issues. The conservation organization would be required to keep its own in-house operational reports for both conserved properties, but would not be required to submit these reports to the resource agencies. These reports would be available to any resource agency by formal request should USFWS, the Corps, RWQCB, or the City of Antioch wish to see annual reports.

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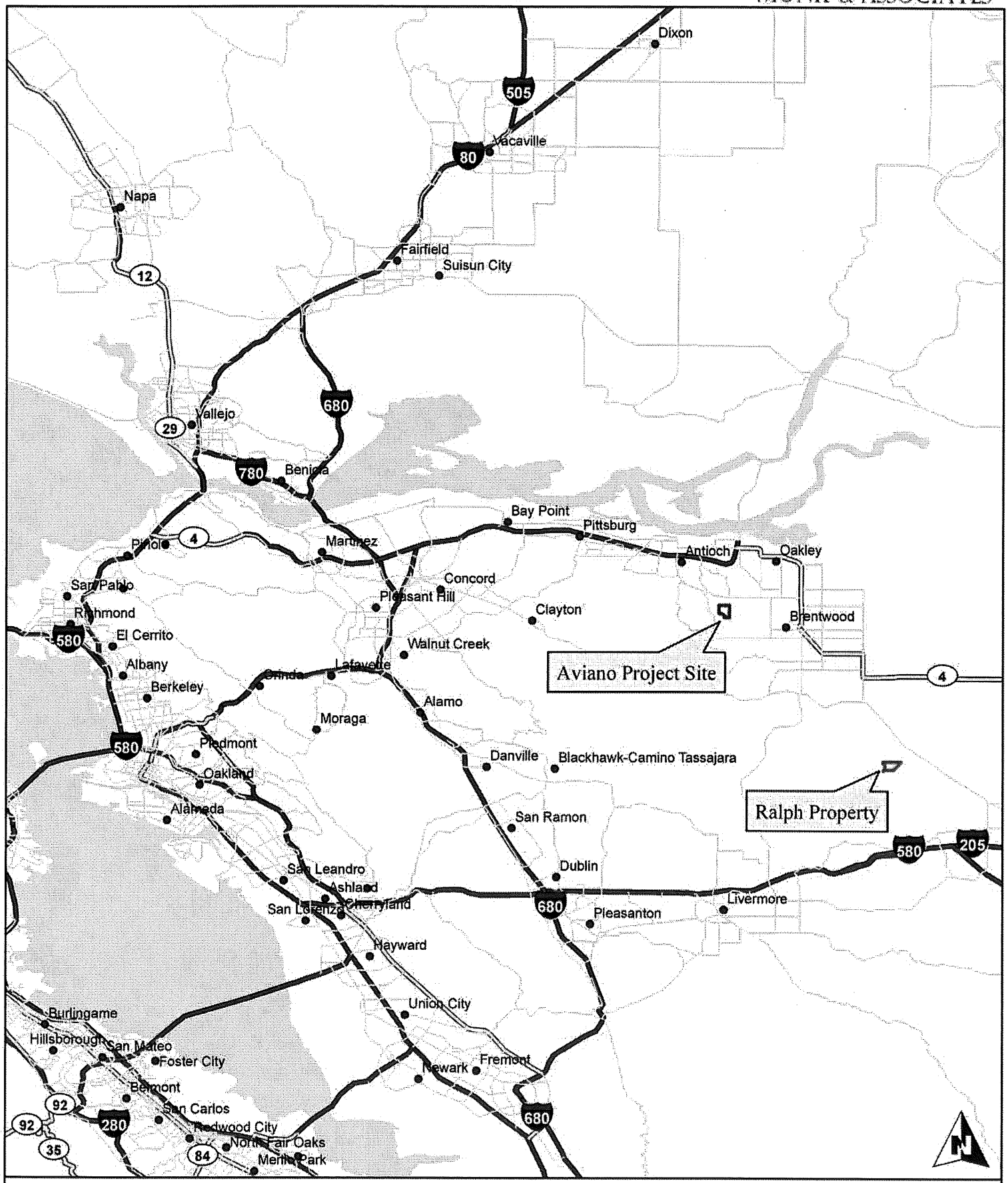
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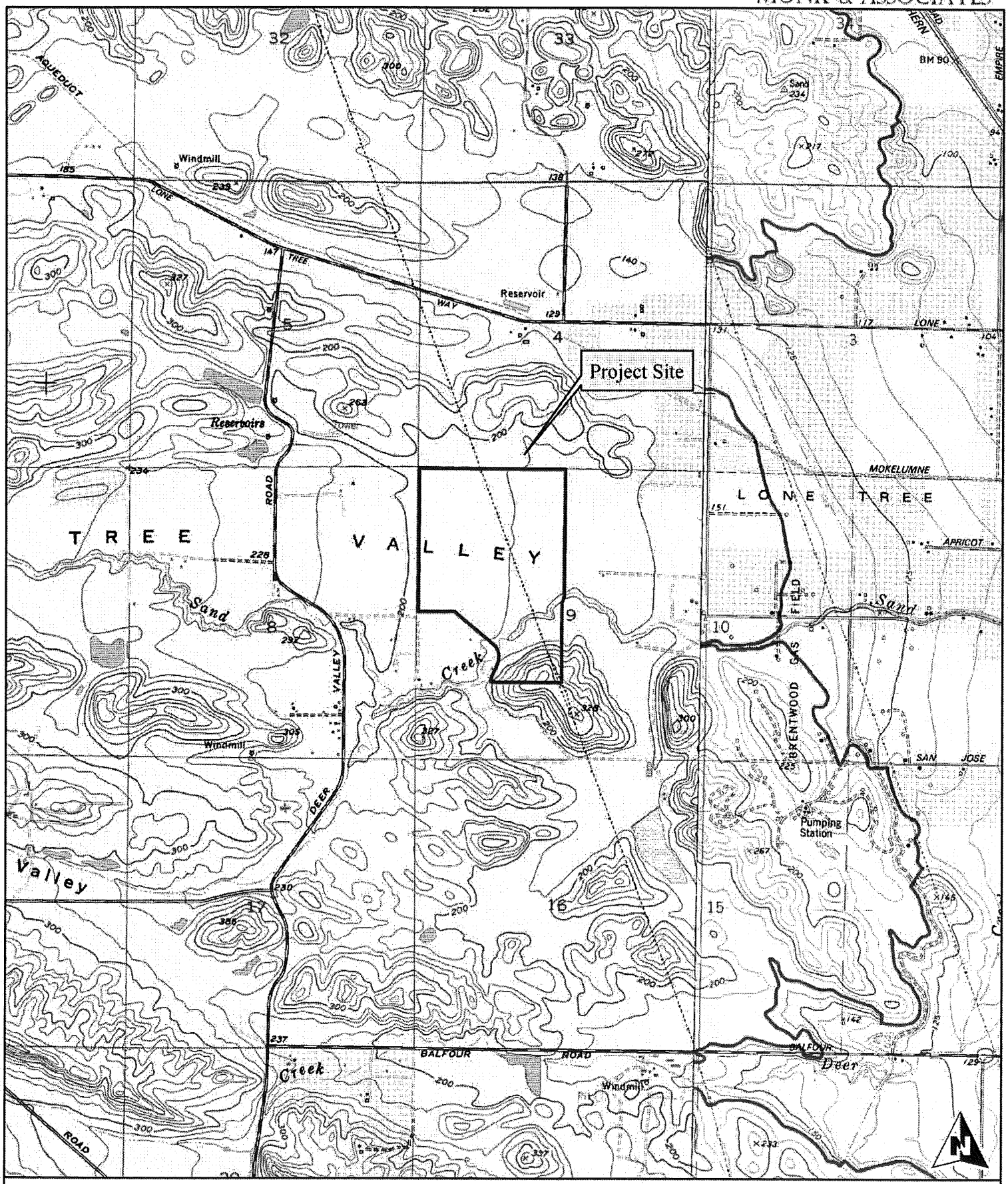
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Figure 1. Aviano Development Site &
Ralph Property Mitigation Site Regional Map
Contra Costa County, California

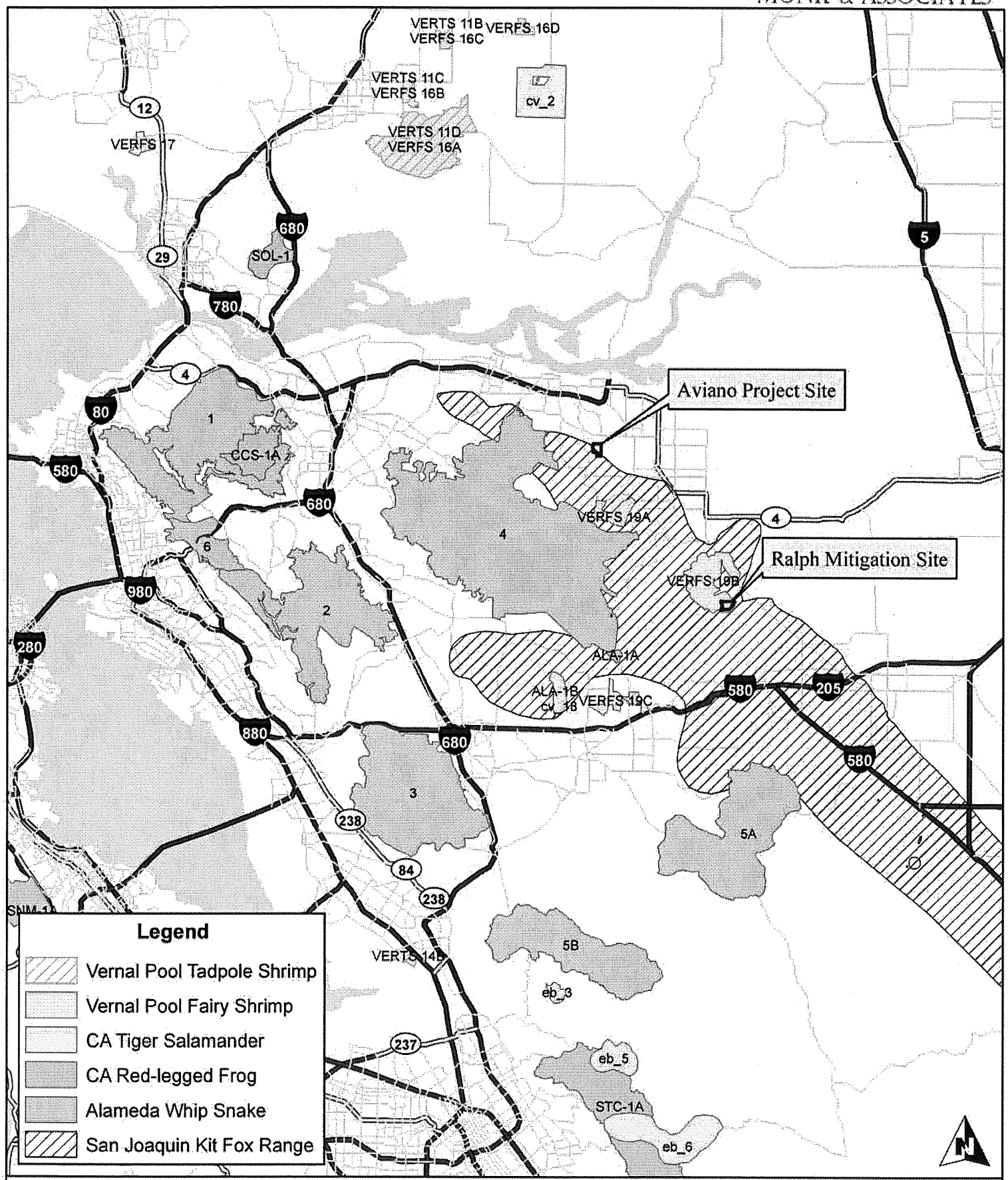
County: Contra Costa
Map Preparation Date: February 16, 2007



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Figure 2. Aviano Development Site Location Map
Contra Costa County, California

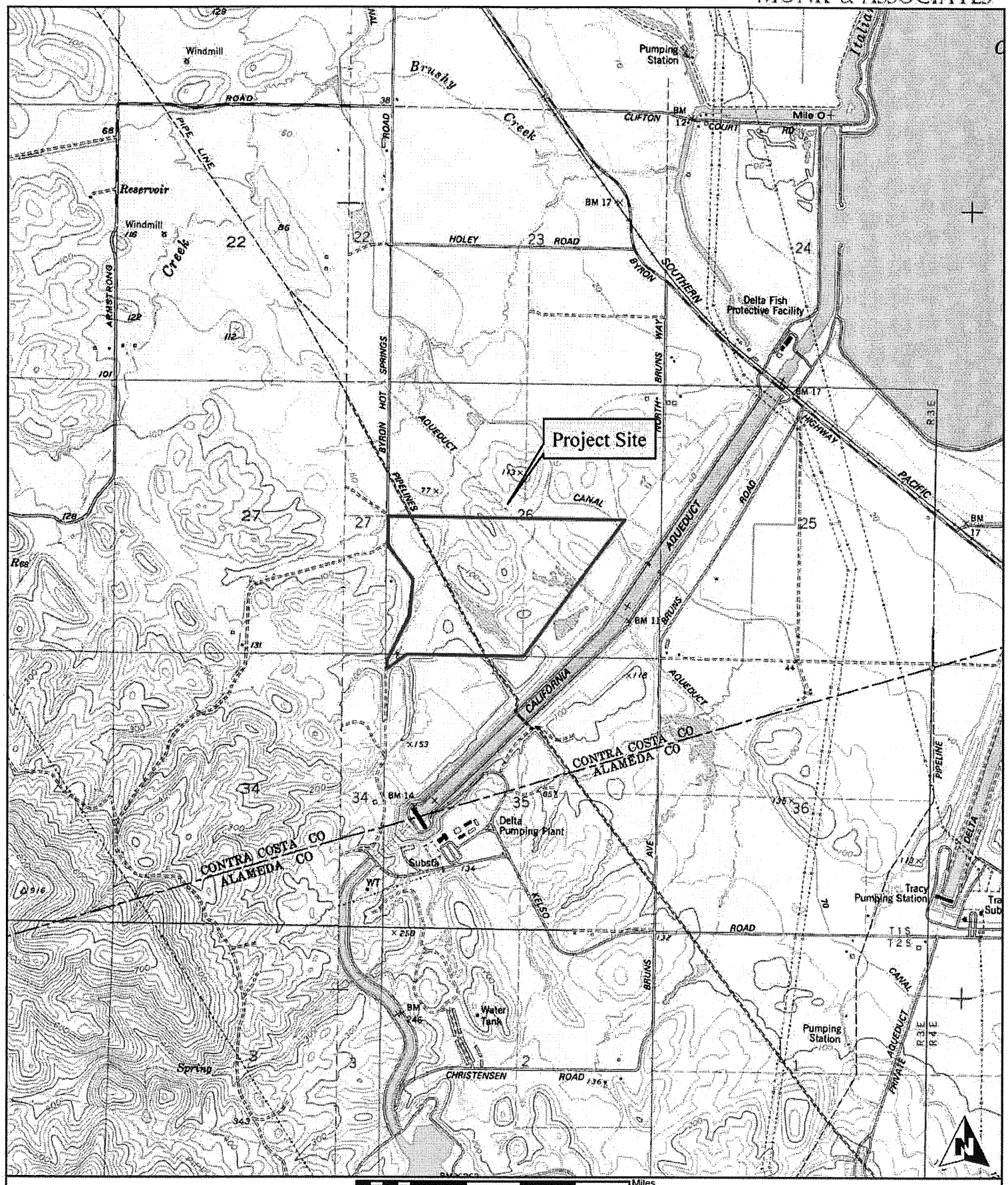
Map Preparation Date: February 16, 2007
Topography Source: http://gis.ca.gov
7.5-Minute Antioch South & Brentwood quadrangles



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Figure 3. Critical Habitat in the Vicinity of the
Aviano Development Site & Ralph Mitigation Site
Contra Costa County, California

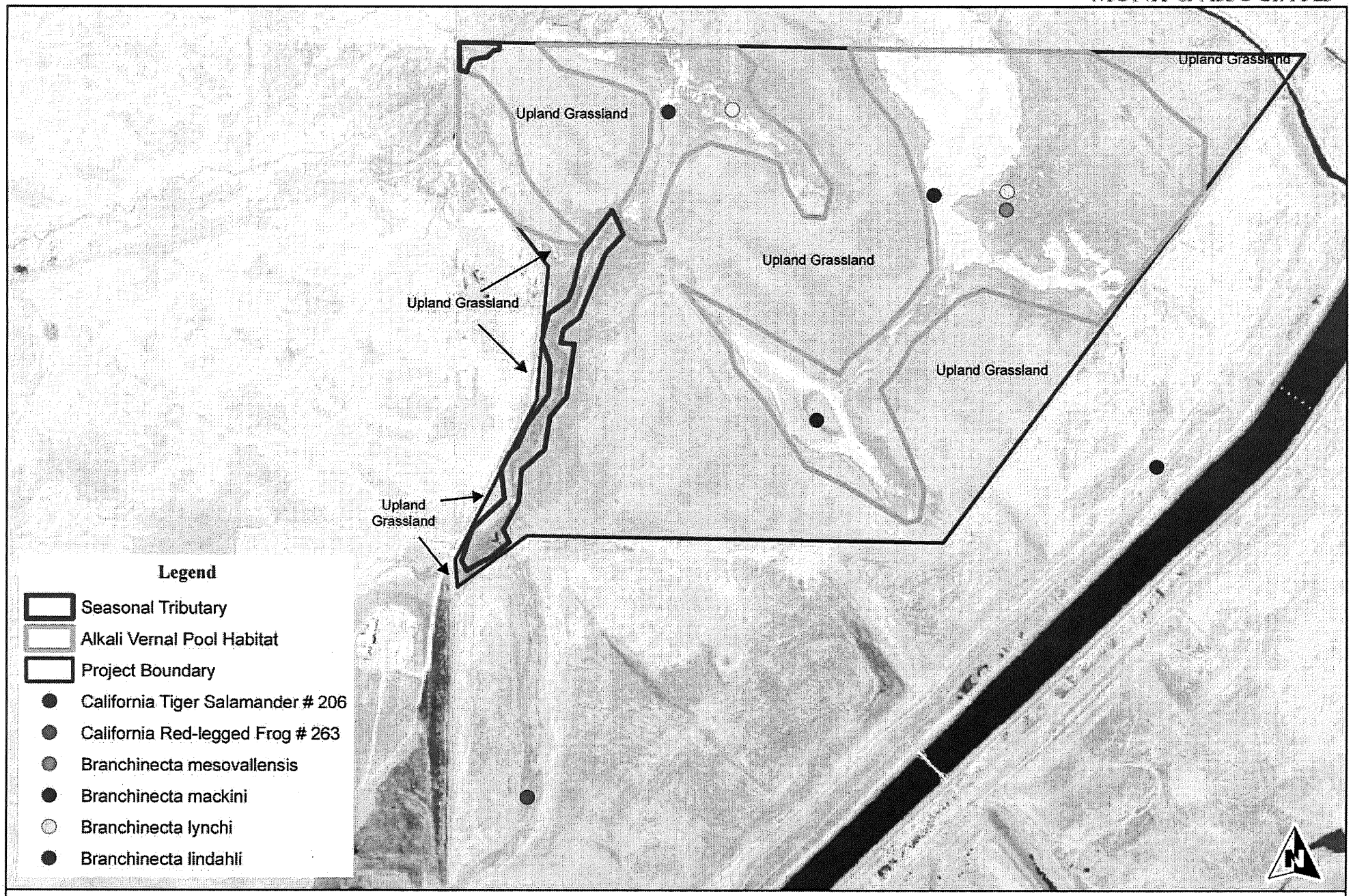
County: Contra Costa
Map Preparation Date: February 22, 2007



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Figure 4. Ralph Property Mitigation Site
Contra Costa County, California

Map Preparation Date: February 16, 2007
Topography Source: http://gis.ca.gov
7.5-Minute Clifotn Court Forebay quadrangle



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Figure 5. Habitats & Special-Status Species Occurrences at the Ralph Property Mitigation Site

Map Preparation Date: February 16, 2007

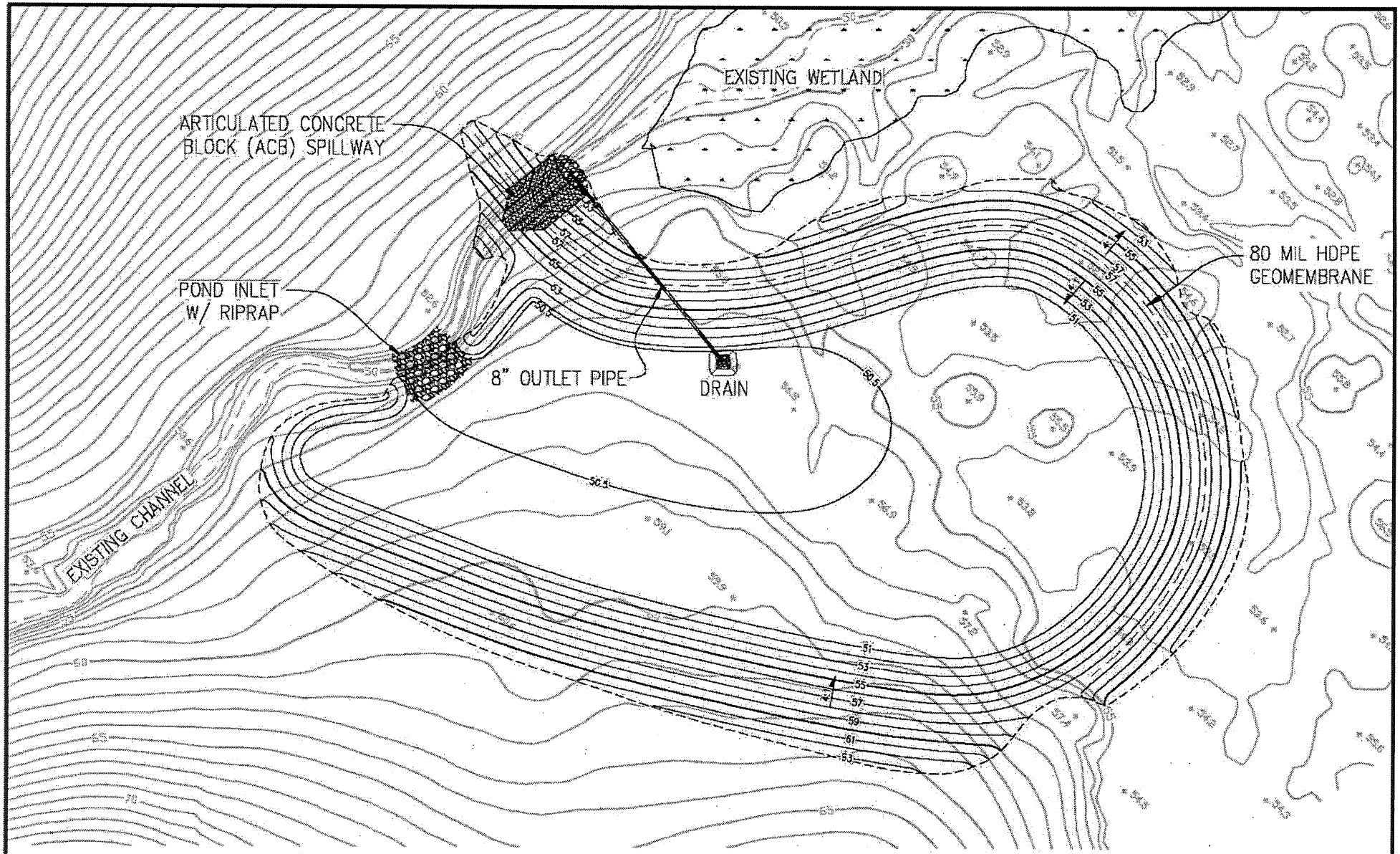


Figure 6. Ralph Property Proposed CRLF Mitigation Pond
Contra Costa County, California

cbg
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G:\1485\ACAD\POND\EXHIBIT G.DWG

Table 1

Special-Status Plant Species Known to Occur in the Vicinity of the Aviano Development Site

Family Taxon Common Name	Status*	Flowering Period	Habitat	Area Locations	Probability on Project Site
Apiaceae					
Lilaeopsis masonii Mason's lilaeopsis	Fed: -- State: CR CNPS: List 1B.1	April-November	Marshes and swamps (brackish or freshwater); riparian scrub. Tidal zones in muddy/silty soil formed through river deposition. Elevation 0-10 meters.	Record for this species located 4.6 miles north of the project site (Occurrence No. 1).	No suitable habitat on the project site. Was not observed during appropriately timed surveys.
Asteraceae					
Aster lentus Suisun Marsh aster	Fed: -- State: - CNPS: List 1B.2	May-November	Marshes and swamps (brackish and fresh water). Endemic to Sac/San Joaquin river delta. Most often seen along sloughs with common reed, tule, cattail and blackberry. Elevation 0-3 meters.	Record for this species located 3.9 miles northeast of the project site (Occurrence No. 148).	No suitable habitat on the project site. Was not observed during appropriately timed surveys.
Blepharizonia plumosa plumosa Big tarplant	Fed: - State: - CNPS: List 1B.1	July-October	Valley and foothill grassland. Clay to clay-loam soils. Usually on slopes and often in burned areas. Elevation 30-505 meters.	Record for this species located 1.7 miles southwest of the project site (Occurrence No. 33).	Was not observed during appropriately timed surveys.
Helianthella castanea Diablo helianthella	Fed: -- State: - CNPS: List 1B.2	March-June	Broadleafed upland forest; chaparral; cismontane woodland; coastal scrub; riparian woodland; valley & foothill grassland. Usually in chaparral/oak woodland interface in rocky azonal soils in partial shade. Elevation 60-1300 m.	Record for this species located 3.1 miles southwest of the project site (Occurrence No. 71).	Was not observed during appropriately timed surveys.
Lasthenia conjugens Contra Costa goldfields	Fed: FE State: - CNPS: List 1B.1	March-June	Valley and foothill grasslands, mesic vernal pools, alkaline playas, cismontane woodlands. Occurs in swales, low depressions in open grassy areas. Elevation 0-470 meters.	Record for this species located 3.2 miles north of the project site (Occurrence No. 8).	No vernal pool habitat on the project site.Was not observed during appropriately timed surveys.

Table 1

Special-Status Plant Species Known to Occur in the Vicinity of the Aviano Development Site

Family Taxon Common Name	Status*	Flowering Period	Habitat	Area Locations	Probability on Project Site
Madia radiata Showy madia	Fed: - State: - CNPS: List 1B.1	March-May	Cismontane woodland; valley and foothill grassland. Mostly on adobe clay in grassland or among shrubs (elev. 75-3500 feet).	Record for this species located 0.5 miles west of the project site (Occurrence No. 26).	Was not observed during appropriately timed surveys.
Boraginaceae					
Amsinckia grandiflora Large-flowered fiddleneck	Fed: FE State: CE CNPS: List 1B.1	April-May	Cismontane woodland, valley and foothill grassland and annual grassland in various soils.	Record for this species located 3.0 miles west of the project site (Occurrence No. 2).	Was not observed during appropriately timed surveys.
Cryptantha hooveri Hoover's cryptantha	Fed: - State: - CNPS: List 1A	April-May	Valley and foothill grassland (sandy).	Record for this species located 3.3 miles northwest of the project site (Occurrence No. 4).	Was not observed during appropriately timed surveys.
Brassicaceae					
Erysimum capitatum angustatum Contra Costa wallflower	Fed: FE State: CE CNPS: List 1B.1	March-July	Inland dunes. Endemic to stabilized dunes of sand and clay near Antioch along the San Joaquin River (elev. 10-60 feet).	Record for this species located 4.4 miles north of the project site (Occurrence No. 2).	No suitable habitat on the project site. Was not observed during appropriately timed surveys.
Chenopodiaceae					
Atriplex depressa Brittlescale	Fed: -- State: - CNPS: List 1B.2	May-October	Chenopod scrub, playas, meadows and seeps, vernal pools, valley and foothill grassland; [alkaline or clay]. Elevation 1-320 meters.	Record for this species located 0.8 miles south of the project site (Occurrence No. 68).	Was not observed during appropriately timed surveys.

Table 1

Special-Status Plant Species Known to Occur in the Vicinity of the Aviano Development Site

Family Taxon Common Name	Status*	Flowering Period	Habitat	Area Locations	Probability on Project Site
Atriplex joaquiniana San Joaquin spearscale	Fed: - State: - CNPS: List 1B.2	April-October	Chenopod scrub; meadows and seeps; playas; valley and foothill grassland; [alkaline]. Elevation 1-835 meters.	Record for this species located 0.6 mile south of the project site (Occurrence No. 85).	Was not observed during appropriately timed surveys.
Ericaceae					
Arctostaphylos auriculata Mount Diablo manzanita	Fed: - State: - CNPS: List 1B.3	January-March	Chaparral (sandstone). Known only from canyons and slopes in the Mt. Diablo area (elev. 360-1500 feet).	Record for this species located 3.3 miles northwest of the project site (Occurrence No. 10).	No manzanitas are on the project site. Was not observed during appropriately timed surveys.
Fabaceae					
Lathyrus jepsonii jepsonii Delta tule pea	Fed: -- State: - CNPS: List 1B.2	May-September	Marshes and swamps (freshwater and brackish). Elevation 0-4 meters.	Record for this species located 5.0 miles north of the project site (Occurrence No. 67).	No suitable habitat on the project site. Was not observed during appropriately timed surveys.
Geraniaceae					
California macrophyllum Large-leaf storksbill	Fed: - State: - CNPS: List 1B.1	March-May	Valley and foothill grassland, cismontane woodland. Elevation range 15-1200 meters. Found in open habitats with friable clay soils.	Record for this species located on the project site (Occurrence No. 96).	This species was identified on the project site. See text.

Table 1

Special-Status Plant Species Known to Occur in the Vicinity of the Aviano Development Site

Family Taxon Common Name	Status*	Flowering Period	Habitat	Area Locations	Probability on Project Site
Linaceae					
Hesperolinon breweri Brewer's western flax	Fed: -- State: - CNPS: List 1B.2	May-July	Chaparral, cismontane woodland, valley and foothill grassland. Often in rocky serpentine soils. Elevation 30-900 meters.	Record for this species located 3.7 miles north of the project site (Occurrence No. 9).	Was not observed during appropriately timed surveys.
Onagraceae					
Oenothera deltoides howellii Antioch dunes evening-primrose	Fed: FE State: CE CNPS: List 1B.1	March-September	Interior dunes. Remnant river bluffs and sand dunes east of Antioch. Elevation 0-30 meters.	Record for this species located 3.6 miles north of the project site (Occurrence No. 3).	No dunes occur on the project site. Was not observed during appropriately timed surveys.
Papaveraceae					
Eschscholzia rhombipetala Diamond-petaled California poppy	Fed: -- State: - CNPS: List 1B.1	March-April	Valley and foothill grassland (alkaline, clay). Elevation 0-975 meters.	Record for this species located 3.3 miles northwest of the project site (Occurrence No. 3).	Was not observed during appropriately timed surveys.
Polygonaceae					
Eriogonum truncatum Mount Diablo buckwheat	Fed: - State: - CNPS: List 1B.1	April-December	Chaparral; coastal scrub; valley and foothill grassland; [sandy]. Dry, exposed clay or sandy substrates. Elevation 3-350 meters.	Record for this species located 3.3 miles northwest of the project site (Occurrence No. 4).	Was not observed during appropriately timed surveys.

Table 1

Special-Status Plant Species Known to Occur in the Vicinity of the Aviano Development Site

Family Taxon Common Name	Status*	Flowering Period	Habitat	Area Locations	Probability on Project Site
Scrophulariaceae					
Cordylanthus mollis hispidus Hispid bird's-beak	Fed: -- State: - CNPS: List 1B.1	June-September	Meadows (alkaline); playas.	Record for this species located 5.3 miles north of the project site (Occurrence No. 18).	Was not observed during appropriately timed surveys.
Limosella subulata Southern mudwort	Fed: - State: - CNPS: List 2.1	May-August	Riparian scrub, freshwater and brackish marsh. Usually on mud bank in marshy or scrubby areas. Known in CA from several occurrences in the Delta. Elevation 0-3 meters.	Record for this species located 4.6 miles north of the project site (Occurrence No. 41).	No suitable habitat on the project site. Was not observed during appropriately timed surveys.

***Status**

Federal:
FE - Federal Endangered
FT - Federal Threatened
FPE - Federal Proposed Endangered
FPT - Federal Proposed Threatened
FC - Federal Candidate

State:
CE - California Endangered
CT - California Threatened
CR - California Rare
CC - California Candidate
CSC - California Species of Special Concern

CNPS:
List 1A - Presumed extinct in California
List 1B - Plants rare, threatened, or endangered in California and elsewhere
List 1B.1 - Seriously endangered in California (over 80% occurrences threatened/ high degree and immediacy of threat)
List 1B.2 - Fairly endangered in California (20-80% occurrences threatened)
List 1B.3 - Not very endangered in California (<20% of occurrences threatened or no current threats known)

CNPS Continued:
List 2 - Plants rare, threatened, or endangered in California, but more common elsewhere
List 2.1 - Seriously endangered in California, but more common elsewhere
List 2.2 - Fairly endangered in California, but more common elsewhere
List 2.3 - Not very endangered in California, but more common elsewhere
List 3 - Plants about which we need more information (Review List)
List 3.1 - Plants about which we need more information (Review List) Seriously endangered in California
List 3.2 - Plants about which we need more information (Review List) Fairly endangered in California
List 4 - Plants of limited distribution - a watch list

Table 2

Special-Status Wildlife Species Known to Occur in the Vicinity of the Aviano Project Site

Species	*Status	Habitat	Closest Locations	Probability on Project Site
Invertebrates				
Vernal pool fairy shrimp *Branchinecta lynchi*	Fed: FT State: - Other:	Endemic to the grasslands of the Central Valley, central coast mountains, and south coast mountains, in static rain-filled pools. Inhabit small, clear water sandstone-depression pools and grassed swale, earth slump, or basalt-flow depression pools.	Record for this species located 1.6 miles west of the project site (Occurrence No. 353).	Moderate. Seasonal wetlands on the project site provide suitable habitat for this species. See text.
Vernal pool tadpole shrimp *Lepidurus packardi*	Fed: FE State: - Other:	Inhabits vernal pools with turbid and/or silty water. Mud substrate typical.	Record for this species located 2.3 miles west of the project site (Occurrence No. 177).	Low. Seasonal wetlands on the project site provide marginal habitat for this species. See text.
Fish				
Sacramento perch *Archoplites interruptus*	Fed: -- State: CSC Other:	Historically found in the sloughs, slow-moving rivers, and lakes of the Central Valley. Prefer warm water. Aquatic vegetation is essential for young. Tolerate wide range of physico-chemical water conditions.	Record for this species located 4.6 miles north of the project site (Occurrence No. 3).	None. No suitable habitat on the project site.
Amphibians				
California tiger salamander *Ambystoma californiense*	Fed: FT State: CSC Other:	Found in grassland habitats of the valleys and foothills. Requires burrows for aestivation and standing water until late spring (May) for larvae to metamorphose.	Record for this species located 0.8 miles south of the project site (Occurrence No. 854).	Moderate. Suitable breeding and upland habitat are present on the project site. See text.
California red-legged frog *Rana draytonii*	Fed: FT State: CSC Other:	Occurs in lowlands and foothills in deeper pools and streams, usually with emergent wetland vegetation. Requires 11-20 weeks of permanent water for larval development.	Record for this species located 1.5 miles southwest of the project site (Occurrence No. 612).	This species has been observed in Sand Creek on the project site. See text.

Table 2

Special-Status Wildlife Species Known to Occur in the Vicinity of the Aviano Project Site

Species	*Status	Habitat	Closest Locations	Probability on Project Site
Reptiles				
Pacific pond turtle (=western pond turtle) *Actinemys marmorata (=Clemmys m.)*	Fed: -- State: CSC Other:	Inhabits ponds, marshes, rivers, streams, and irrigation ditches with aquatic vegetation. Needs suitable basking sites and upland habitat for egg laying. Occurs in the Central Valley and Contra Costa County.	Record for this species located 4.2 miles south of the project site (Occurrence No. 131).	Moderate. Sand Creek may provide suitable habitat on site.
Silvery legless lizard *Anniella pulchra pulchra*	Fed: -- State: CSC Other:	Sandy or loose loamy soils under sparse vegetation. Soil moisture is essential. They prefer soils with high moisture content.	Record for this species located 2.9 miles west of the project site (Occurrence No. 17).	None. No suitable habitat is present on site.
Giant garter snake *Thamnophis gigas*	Fed: FT State: CT Other:	Inhabits freshwater marshes and low gradient streams. Also found in drainage canals and irrigation ditches.	Record for this species located 5.3 miles north of the project site (Occurrence No. 47).	None. No suitable habitat is present on the project site.
Birds				
White-tailed kite *Elanus leucurus*	Fed: State: Other: *	Found in lower foothills and valley margins with scattered oaks and along river bottomlands or marshes adjacent to oak woodlands. Nests in trees with dense tops.	Record for this species located 2.0 miles northeast of the project site (Occurrence No. 87).	Moderate. Oak trees on the project site provide suitable nesting habitat for this species.
Swainson's hawk *Buteo swainsoni*	Fed: - State: CT Other: *	Migratory and resident raptor that breeds in open areas with scattered trees. Prefers riparian and sparse oak woodland habitats for nesting. Requires nearby grasslands, grain fields, or alfalfa for foraging.	Record for this species located 5.1 miles northeast of the project site (Occurrence No. 1312).	Low. Suitable nesting habitat is present in the oaks on the project site.

Table 2

Special-Status Wildlife Species Known to Occur in the Vicinity of the Aviano Project Site

Species	*Status	Habitat	Closest Locations	Probability on Project Site
California black rail *Laterallus jamaicensis coturniculus*	Fed: -- State: CT Other: *	Inhabits salt marshes bordering larger bays. Prefers tidal salt marshes of pickleweed. May also occur in fresh to brackish marshes.	Record for this species located 4.5 miles northeast of the project site (Occurrence No. 109).	None. No suitable habitat on the project site.
Western burrowing owl *Athene cunicularia hypugaea*	Fed: -- State: CSC Other: *	Found in open, dry annual or perennial grasslands, deserts and scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	Records for this species located 0.25 mile west of the project site (Occurrence No. 623) and 0.23 mile southeast of the project site (Occurrence No. 857).	This species has been observed on the project site. Suitable nesting habitat is present on site.
Loggerhead shrike *Lanius ludovicianus*	Fed: -- State: CSC Other:	Found in broken woodlands, shrubland, and other habitats. Prefers open country with scattered perches for hunting and fairly dense brush for nesting.	Record for this species located 4.3 miles northeast of the project site (Occurrence No. 3).	Moderate. This species has been observed foraging on the project site, and could nest in the oaks on the south side of the project site.
Tricolored blackbird *Agelaius tricolor*	Fed: -- State: CSC Other: *	Colonial nester in dense cattails, tules, brambles or other dense vegetation. Requires open water, dense vegetation, and open grassy areas for foraging.	Record for this species located 4.3 miles south of the project site (Occurrence No. 267).	None. No suitable habitat on the project site.
Mammals				
San Joaquin kit fox *Vulpes macrotis mutica*	Fed: FE State: CT Other:	Inhabits open grasslands with scattered shrubs. Needs loose-textured sand soils for burrowing.	Record for this species located 3.4 miles northwest of the project site (Occurrence No. 21).	Low. No sign of kit fox activity on the project site. However, site is within CDFG's kit fox range. See text.
American badger *Taxidea taxus*	Fed: - State: CSC Other:	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Need sufficient food, friable soils & open, uncultivated ground. Prey on burrowing rodents. Dig burrows.	Record for this species located 2.2 miles south of the project site (Occurrence No. 185).	Not likely to occur on the project site. No suitable burrows have been identified to date. Preconstruction surveys for burrowing owls would identify this species if present.

Table 2

Special-Status Wildlife Species Known to Occur in the Vicinity of the Aviano Project Site

Species	*Status	Habitat	Closest Locations	Probability on Project Site

***Status**

Federal:
FE - Federal Endangered
FT - Federal Threatened
FPE - Federal Proposed Endangered
FPT - Federal Proposed Threatened
FC - Federal Candidate
FPD - Federally Proposed for delisting

State:
CE - California Endangered
CT - California Threatened
CR - California Rare
CC - California Candidate
CSC - California Species of Special Concern

*Other:
Most birds have protection under the Migratory Bird Treaty Act. Raptors and their nests are protected by provisions of the California Fish and Game Code. A few species, such as the monarch butterfly and "California Fully Protected Animals," may be protected by policies of the California Department of Fish and Game.

Table 3

Plant Species Observed at the Aviano Development Site

Angiosperms - Dicots	
Apiaceae	
Hydrocotyle verticillata	Whorled penny-wort
**Torilis arvensis*	Torilis
**Torilis nodosa*	Knotted hedge parsley
Asclepiadaceae	
Asclepias fascicularis	narrow-leaf milkweed
Asteraceae	
Achillea millefolium	Yarrow
Achyrachaena mollis	Blow-wives
Agoseris grandiflora	False dandelion
Agoseris heterophylla	False dandelion
**Anthemis cotula*	Mayweed
Artemisia californica	California sagebrush
Artemisia douglasiana	California mugwort
Aster chilensis	Common California aster
Aster radulinus	Broad-leaf aster
**Carduus pycnocephalus*	Italian thistle
**Centaurea calcitrapa*	Purple star-thistle
**Centaurea solstitialis*	Yellow star-thistle
Centromadia fitchii	Fitch's spikeweed
**Chamomilla suaveolens*	Pineapple-weed
**Cirsium vulgare*	bull thistle
Conyza canadensis	Horseweed
**Cotula coronopifolia*	Brass-buttons
**Cynara cardunculus*	Artichoke thistle
Grindelia camporum camporum	Great Valley gumweed
Hesperevax sparsiflora sparsiflora	Dwarf hesperevax
**Hypochaeris glabra*	Smooth cat's-ear
**Lactuca serriola*	prickly lettuce
**Picris echioides*	bristly ox-tongue
**Silybum marianum*	Milk thistle
**Sonchus asper asper*	Prickly sow-thistle
**Sonchus oleraceus*	common sow-thistle
Uropappus lindleyi	Silver puffs
Xanthium spinosum	Spiny cocklebur
Xanthium strumarium	Cocklebur
Boraginaceae	
Amsinckia menziesii	Fiddleneck
Heliotropium curassavicum	Heliotrope
Plagiobothrys stipitatus micranthus	Stipitate popcornflower
Plagiobothrys trachycarpus	Rough-fruit popcornflower
Brassicaceae	
**Hirschfeldia incana*	Short-podded mustard
**Lepidium latifolium*	Broad-leaf peppergrass
Lepidium nitidum nitidum	Peppergrass
Rorippa nasturtium-aquaticum	Water cress

* Indicates a non-native species

Table 3

Plant Species Observed at the Aviano Development Site

**Sinapis arvensis*	Charlock
Caprifoliaceae	
Sambucus mexicana	Blue elderberry
Caryophyllaceae	
**Cerastium glomeratum*	Mouse-ear chickweed
Convolvulaceae	
**Convolvulus arvensis*	Bindweed
Euphorbiaceae	
Chamaesyce ocellata ocellata	Valley spurge
Eremocarpus setigerus	Turkey mullein
Fabaceae	
Lathyrus vestitus ochropetalus	Wild-pea
Lupinus bicolor	Miniature lupine
Lupinus nanus	Sky lupine
Lupinus succulentus	Arroyo lupine
**Medicago polymorpha*	California burclover
**Melilotus indica*	Sour clover
Thermopsis macrophylla	Santa Ynez false lupine
**Trifolium dubium*	Little hop clover
**Trifolium hirtum*	Rose clover
**Trifolium subterraneum*	Subterranean clover
Trifolium willdenovii	Tomcat clover
**Vicia benghalensis*	Purple vetch
**Vicia sativa*	common vetch
**Vicia sp.*	Vetch
**Vicia villosa varia*	Winter vetch
Fagaceae	
Quercus douglasii	Blue oak
Quercus lobata	Valley oak
Frankeniaceae	
Frankenia salina	Alkali heath
Geraniaceae	
California macrophyllum	Large-leaf storksbill
**Erodium botrys*	broad-leaf filaree
**Erodium brachycarpum*	Short-fruited stork's-bill
**Erodium cicutarium*	Red-stem filaree
**Erodium moschatum*	White-stem filaree
**Geranium dissectum*	cut-leaf geranium
**Geranium molle*	Crane's-bill geranium
Hippocastanaceae	
Aesculus californica	California buckeye
Hydrophyllaceae	
Pholistoma membranaceum	White fiesta flower
Lamiaceae	
Trichostema lanceolatum	Vinegar weed
Malvaceae	
**Malva neglecta*	Common mallow

* Indicates a non-native species

Table 3

Plant Species Observed at the Aviano Development Site

Malvella leprosa	Alkali mallow
Moraceae	
**Ficus carica*	Fig
**Morus alba*	White mulberry
Polygonaceae	
**Polygonum arenastrum*	common knotweed
**Rumex crispus*	curly dock
**Rumex pulcher*	Fiddle dock
Portulacaceae	
Claytonia perfoliata	Miner's lettuce
Primulaceae	
**Anagallis arvensis*	Scarlet pimpernel
Ranunculaceae	
**Ranunculus muricatus*	Spiny-fruited buttercup
Ranunculus sceleratus	Cursed buttercup
Rosaceae	
Heteromeles arbutifolia	Toyon
**Prunus dulcis*	Almond tree
Rosa californica	California rose
Rubiaceae	
**Galium aparine*	Goose grass
Salicaceae	
Populus fremontii fremontii	Fremont cottonwood
Salix laevigata	Red willow
Saxifragaceae	
Lithophragma parviflorum parviflorum	Woodland star
Scrophulariaceae	
**Bellardia trixago*	Bellardia
Castilleja attenuata	Valley tassels
Castilleja exserta exserta	Purple owl's-clover
Mimulus guttatus	Common monkeyflower
**Parentucellia viscosa*	Parentucellia
Triphysaria eriantha eriantha	Butter-and-eggs
**Veronica peregrina xalapensis*	Purslane speedwell
Solanaceae	
**Nicotiana glauca*	Tree tobacco
Solanum umbelliferum	Nightshade
Verbenaceae	
Verbena lasiostachys lasiostachys	Verbena
Angiosperms -Monocots	
Cyperaceae	
Bolboschoenus robustus	Alkali bulrush
Schoenoplectus americanus	Olney's bulrush
Juncaceae	
Juncus bufonius bufonius	Toad rush

* Indicates a non-native species

Table 3

Plant Species Observed at the Aviano Development Site

Juncus mexicanus	Mexican rush
Liliaceae	
Dichelostemma capitatum capitatum	Blue dicks
Triteleia laxa	Ithuriel's spear
Poaceae	
**Aira caryophyllea*	Silver European hairgrass
**Avena fatua*	Wild oat
**Bromus diandrus*	ripgut grass
**Bromus hordeaceus*	soft chess
**Cynodon dactylon*	Bermuda grass
**Cynosurus echinatus*	Hedgehog dogtail
**Hordeum marinum gussoneanum*	Mediterranean barley
**Hordeum murinum leporinum*	Foxtail barley
Leymus triticoides	Creeping wildrye
**Lolium multiflorum*	Italian ryegrass
**Phalaris paradoxa*	Paradox canary-grass
**Polypogon interruptus*	Ditch beard grass
**Polypogon monspeliensis*	Annual beard grass
**Vulpia myuros myuros*	Rat-tail fescue
Typhaceae	
Typha angustifolia	Narrow-leaved cattail
Typha latifolia	broad-leaved cattail

* Indicates a non-native species

Table 4
Wildlife Species Observed at the Aviano Development Site

Invertebrates	
Signal crayfish	*Pacifastacus leniusculus*
Fish	
Threespine stickleback	*Gasterosteus aculeatus*
Mosquito fish	*Gambusia affinis*
Amphibians	
Western toad	*Bufo boreas*
California red-legged frog	*Rana draytonii*
Pacific tree frog	*Hyla regilla*
Reptiles	
Western fence lizard	*Sceloporus occidentalis*
Gilbert's skink	*Eumeces gilberti*
Gopher snake	*Pituophis melanoleucus*
Birds	
Great blue heron	*Ardea herodias*
Green heron	*Butorides virescens*
Mallard	*Anas platyrhynchos*
Red-tailed hawk	*Buteo jamaicensis*
American kestrel	*Falco sparverius*
Ring-necked pheasant	*Phasianus colchicus*
California quail	*Callipepla californica*
Killdeer	*Charadrius vociferus*
Long-billed curlew	*Numenius americanus*
Marbled godwit	*Limosa fedoa*
Common snipe	*Gallinago gallinago*
Mourning dove	*Zenaida macroura*
Barn owl	*Tyto alba*
Great Horned owl	*Bubo virginianus*
Western burrowing owl	*Athene cunicularia hypugaea*
Anna's hummingbird	*Calypte anna*
Belted kingfisher	*Ceryle alcyon*
Nuttall's woodpecker	*Picoides nuttallii*
Northern flicker	*Colaptes auratus*
Black phoebe	*Sayornis nigricans*
Say's phoebe	*Sayornis saya*
Western kingbird	*Tyrannus verticalis*
Loggerhead shrike	*Lanius ludovicianus*
Western scrub jay	*Aphelocoma californica*
American crow	*Corvus brachyrhynchos*
Northern rough-winged swallow	*Stelgidopteryx serripennis*
Barn swallow	*Hirundo rustica*
Oak titmouse	*Baeolophus inornatus*

Table 4

Wildlife Species Observed at the Aviano Development Site

Ruby-crowned kinglet	*Regulus calendula*
Northern mockingbird	*Mimus polyglottos*
European starling	*Sturnus vulgaris*
American pipit	*Anthus rubescens*
Yellow-rumped warbler	*Dendroica coronata*
Savannah sparrow	*Passerculus sandwichensis*
White-crowned sparrow	*Zonotrichia leucophrys*
Red-winged blackbird	*Agelaius phoeniceus*
Western meadowlark	*Sturnella neglecta*
Brewer's blackbird	*Euphagus cyanocephalus*
Brown-headed cowbird	*Molothrus ater*
Bullock's oriole	*Icterus bullockii*
House finch	*Carpodacus mexicanus*
Lesser goldfinch	*Carduelis psaltria*

Mammals

Virginia opossum	*Didelphis virginiana*
Black-tailed hare	*Lepus californicus*
California ground squirrel	*Spermophilus beechyi*
Botta's pocket gopher	*Thomomys bottae*
California meadow vole	*Microtus californicus*
Coyote	*Canis latrans*
Red fox	*Vulpes vulpes*
Raccoon	*Procyon lotor*

Table 5

Plant Species Observed at the Ralph Mitigation Property

Angiosperms - Dicots	
Aizoaceae	
Sesuvium verrucosum	Sea-purslane
Apiaceae	
Eryngium vaseyi	Vasey's coyote-thistle
Asclepiadaceae	
Asclepias californica	California milkweed
Asclepias fascicularis	narrow-leaf milkweed
Asteraceae	
Achyrachaena mollis	Blow-wives
**Carduus pycnocephalus*	Italian thistle
Centromadia pungens pungens	Common spikeweed
**Chamomilla suaveolens*	Pineapple-weed
**Cotula coronopifolia*	Brass-buttons
Grindelia camporum camporum	Great Valley gumweed
Hesperevax sp.	Evax
Holocarpha sp.	Tarweed
**Hypochaeris glabra*	Smooth cat's-ear
**Hypochaeris radicata*	rough cat's-ear
Lasthenia californica	Goldfields
Microseris sp.	Microseris
Psilocarphus tenellus tenellus	Slender woolly-marbles
**Senecio vulgaris*	Common groundsel
**Silybum marianum*	Milk thistle
Boraginaceae	
Amsinckia menziesii intermedia	Common fiddleneck
Plagiobothrys acanthocarpus	Adobe allocarya
Plagiobothrys nothofulvus	Rusty popcornflower
Plagiobothrys stipitatus stipitatus	Stipitate popcornflower
Brassicaceae	
**Hirschfeldia incana*	Short-podded mustard
Lepidium dictyotum acutidens	Sharp-pod peppergrass
Lepidium dictyotum dictyotum	Veiny peppergrass
**Lepidium latifolium*	Broad-leaf peppergrass
Rorippa nasturtium-aquaticum	Water cress
Callitrichaceae	
Callitriche sp.	Water-starwort
Caryophyllaceae	
Cerastium arvense	Meadow chickweed
**Spergula arvensis arvensis*	Stickwort
Spergularia macrotheca longistyla	Sand-spurrey
Chenopodiaceae	
Allenrolfea occidentalis	Iodine bush
Atriplex depressa	Brittlescale
Atriplex fruticulosa	Ball saltbush
Suaeda moquinii	Bush seepweed

* Indicates a non-native species

Table 5

Plant Species Observed at the Ralph Mitigation Property

Convolvulaceae	
Calystegia sp.	Morning Glory
Cressa truxillensis	Alkali weed
Crassulaceae	
Crassula connata	Sandy pygmy-weed
Euphorbiaceae	
Eremocarpus setigerus	Turkey mullein
Fabaceae	
Astragalus sp.	Loco weed
**Medicago polymorpha*	California burclover
**Melilotus indica*	Sour clover
Trifolium depauperatum	Dwarf sack clover
**Trifolium dubium*	Little hop clover
**Trifolium fragiferum*	Strawberry clover
Trifolium willdenovii	Tomcat clover
Frankeniaceae	
Frankenia salina	Alkali heath
Geraniaceae	
**Erodium botrys*	broad-leaf filaree
**Erodium cicutarium*	Red-stem filaree
**Erodium moschatum*	White-stem filaree
Lamiaceae	
Trichostema lanatum	Woolly bluecurls
Lythraceae	
**Lythrum hyssopifolium*	Hyssop loosestrife
Malvaceae	
Malvella leprosa	Alkali mallow
Plantaginaceae	
Plantago elongata	Elongate plantain
Polemoniaceae	
Linanthus liniflorus	Linanthus
Polygonaceae	
Lastarriaea corriacea	Lastarriaea
Portulacaceae	
Montia fontana	Blinks
Ranunculaceae	
Myosurus minimus apus	Little mousetail
Scrophulariaceae	
Castilleja exserta exserta	Purple owl's-clover
Mimulus guttatus	Common monkeyflower
Orthocarpus sp.	orthocarpus
**Veronica peregrina xalapensis*	Purslane speedwell
Angiosperms -Monocots	
Cyperaceae	
Schoenoplectus pungens	Common threesquare

* Indicates a non-native species

Table 5

Plant Species Observed at the Ralph Mitigation Property

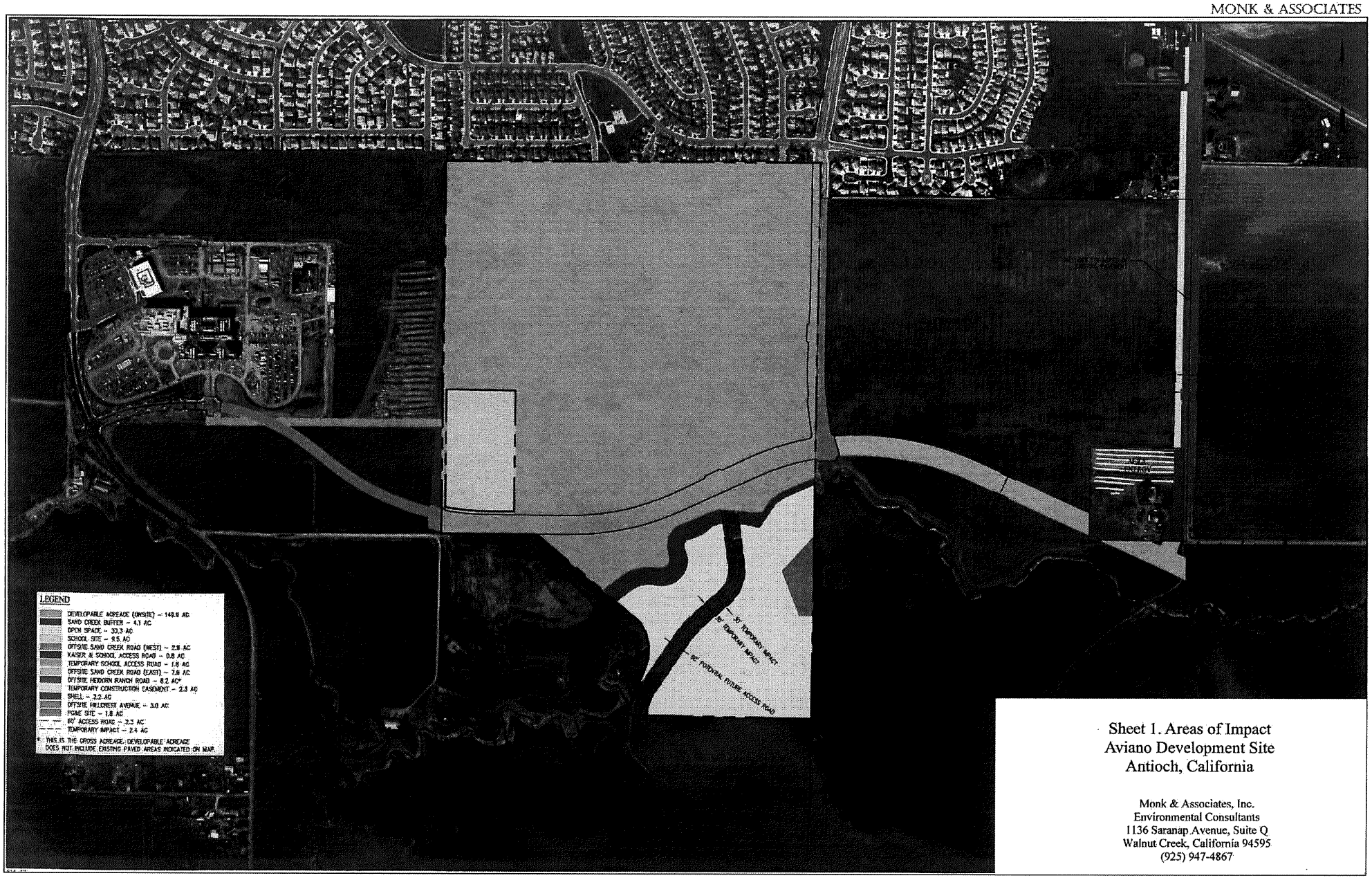
Juncaceae	
Juncus bufonius	toad rush
Liliaceae	
Brodiaea terrestris terrestris	Brodiaea
Poaceae	
**Bromus diandrus*	ripgut grass
**Bromus hordeaceus*	soft chess
**Bromus madritensis rubens*	Red brome
Deschampsia danthonioides	Annual hairgrass
Distichlis spicata	Saltgrass
Hordeum brachyantherum	Meadow barley
**Hordeum marinum gussoneanum*	Mediterranean barley
**Hordeum murinum leporinum*	Foxtail barley
**Lolium multiflorum*	Italian ryegrass
**Parapholis incurva*	Sickle grass
Puccinellia simplex	California alkali grass
**Vulpia bromoides*	six-weeks brome grass

* Indicates a non-native species

Table 6

Wildlife Species Observed at the Ralph Mitigation Property

Amphibians	
California tiger salamander	*Ambystoma californiense*
Western toad	*Bufo boreas*
Birds	
Turkey vulture	*Cathartes aura*
Mallard	*Anas platyrhynchos*
Northern harrier	*Circus cyaneus*
Red-tailed hawk	*Buteo jamaicensis*
Ferruginous hawk	*Buteo regalis*
Golden eagle	*Aquila chrysaetos*
American kestrel	*Falco sparverius*
Killdeer	*Charadrius vociferus*
Long-billed curlew	*Numenius americanus*
Western burrowing owl	*Athene cunicularia hypugaea*
Loggerhead shrike	*Lanius ludovicianus*
American crow	*Corvus brachyrhynchos*
Common raven	*Corvus corax*
California horned lark	*Eremophila alpestris actia*
Cliff swallow	*Petrochelidon pyrrhonota*
American pipit	*Anthus rubescens*
Savannah sparrow	*Passerculus sandwichensis*
Western meadowlark	*Sturnella neglecta*
Brewer's blackbird	*Euphagus cyanocephalus*
Brown-headed cowbird	*Molothrus ater*
Mammals	
Audubon's cottontail	*Sylvilagus audubonii*
California ground squirrel	*Spermophilus beechyi*
Coyote	*Canis latrans*
American badger	*Taxidea taxus*



Sheet 1. Areas of Impact
Aviano Development Site
Antioch, California

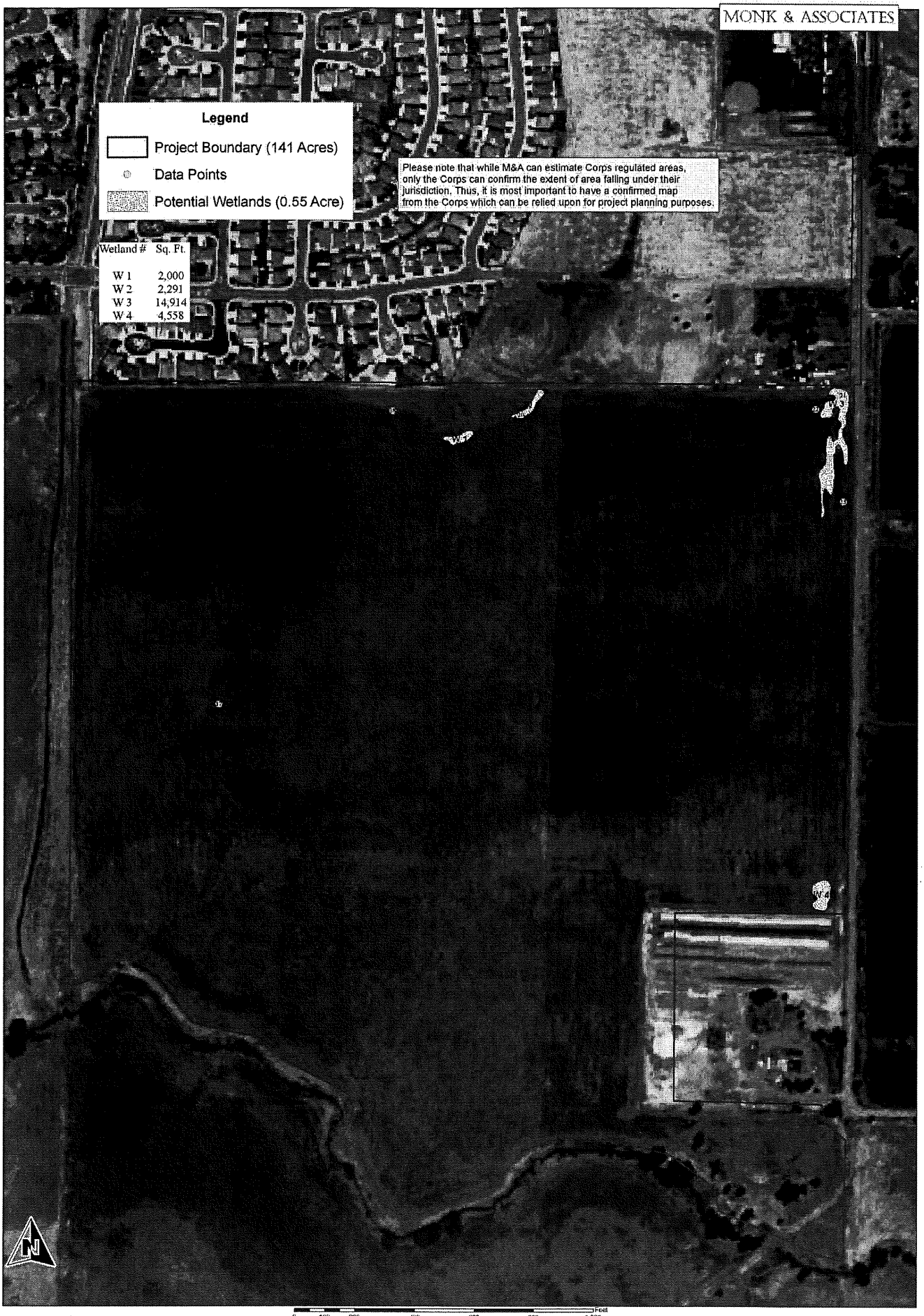
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Walnut Creek, California 94595
(925) 947-4867



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Sheet 2. Confirmed Wetland Delineation
Pulte Homes Edgewood/Williamson Project Site, Antioch, California

Scale: 1 inch = 200 feet
Field Delineation Date: April 6, 12 & 25, 2005
Map Preparation Date: Feburary 23, 2006
Corps Verification Date: September 28, 2005
Map Revision Date: March 26, 2007



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Sheet 3. Preliminary Wetland Delineation for
Ginocchio Project Site
Antioch, California

Scale: 1 inch = 200 feet
Map Preparation Date: February 16, 2007
Map Revision Date: July 5, 2007

APPENDIX K

RESOURCE MANAGEMENT PLAN

LIVE OAK ASSOCIATES, INC.
an Ecological Consulting Firm

DRAFT RESOURCE MANAGEMENT PLAN FOR THE AVIANO ADULT COMMUNITY MITIGATION AREAS

Prepared by

LIVE OAK ASSOCIATES, INC.

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1 INTRODUCTION

The City of Antioch's General Plan Section 10.0 (Resource Management) outlines objectives and policies as they relate to biological resources. The overall objective is to preserve natural streams and other habitats that support special-status plant and animal species. While it is preferred to preserve these resources in-situ, the General Plan allows for mitigation off-site within eastern Contra Costa County, if on-site preservation is not feasible. Whether such resources are preserved on-site within natural open space areas, or are mitigated off-site, the General Plan requires that such preserved areas be managed and maintained pursuant to a Resource Management Plan (RMP) (Section 10.3.2e and Section 10.4.2d of the General Plan, respectively). If the acquisition of off-site mitigation lands is not feasible, at the discretion of the Community Development Director or other branch of the City, off-site mitigation may also occur at an established mitigation bank that includes Antioch in its service area, or that occurs within an area that the East Contra Costa Multi-Species Habitat Conservation Plan (HCP) identifies as having good conservation value.

2 AVIANO ADULT COMMUNITY PROJECT DESCRIPTION

An adult residential development is planned on approximately 149.6 acres of the approximately 189-acre project site, which will include up to 535 adult-single-family units, a recreation facility, parks, landscaped areas and associated parking. The project site parcel extends south of Sand Creek; however, the project does not include any development activities south of Sand Creek. Rather the proposed project includes a proposal to dedicate a preserve consisting of a 4.7-acre creek buffer area, 31.2 acres of open space, totaling 35.9 acres that will be maintained south of the proposed project. In the future, the City of Antioch may construct an access road through the Open Space Preserve. The 2.5 acre temporary construction area adjacent to the potential future road is included in the 35.9-acre on-site Open Space Preserve but the 2.5 acre area for the road itself is not included. Additionally, the 35.9 acres does not include a 1.0-acre easement which has been granted to PG&E for grading and landscaping surrounding a new PG&E substation located near the eastern boundary of the Open Space Preserve.

In addition to the on-site project impacts, several permanent and temporary project-related impacts will occur on adjacent parcels as a result of construction of utilities and roads. These areas include a portion (1.4 acres) of the Royal Formosa/Chen property located west of the project site and portions of the Ginochio/Nunn (21.1 acres) and Aera Energy (2.2 acres) properties east of the project site. Of the approximately 25 acres of off-site impacted areas, 4.4 acres will result in permanent impacts on the Royal Formosa/Chen and Ginochio/Nunn properties due to the AUSD Medical High School road and the off-site portion of Hillcrest Avenue, respectively.

3 SENSITIVE BIOLOGICAL RESOURCES OF THE PROJECT SITE

The proposed Aviano Adult Community project will result in the permanent loss of 154 acres of non-native grasslands (149.6 acres on-site and 4.4 acres off-site), 0.32-acres of seasonal wetlands, a 0.86-acre manmade detention channel occurring to the north of the Sand Creek riparian corridor, and 0.03 acres of riparian habitat; all of which provide known or potential habitat for several special-status grassland, vernal pool and riparian wildlife species. This is discussed further below. Remaining areas of the site, including the Sand Creek riparian corridor and non-native grassland habitat to the south of Sand Creek will be permanently protected within the Open Space Preserve, totaling 35.9 acres.

Sand Creek Riparian Corridor. Riparian habitat occurs along Sand Creek which flows west to east in the southern portion of the site. This habitat on the site is characterized by a very sparse open canopy of native riparian trees including valley oak (*Quercus lobata*), western sycamore (*Platanus racemosa*), and California buckeye (*Aesculus californica*). Because of the open canopy, the understory in this habitat is largely undifferentiated from the surrounding non-native grasslands, supporting primarily the same non-native annual grasses and forbs. A shrub understory is generally lacking from this habitat on the site. The Sand Creek riparian corridor will be preserved on-site in the Open Space Preserve area, with an average set-back of 100 feet. However, 0.03 acres of riparian habitat within the channel will be impacted by the construction of two outfalls on the northern bank which will drain the project's two proposed detention basins. Additionally, project development proposed just north of the preserved set-back area, including a 12-foot wide paved trail, detention basins and landscaped areas will encroach well within 100 feet of the dripline of riparian vegetation or the bank of the creek, whichever is greater, in several locations. Mitigations included for waters of the U.S. and state and for impacts to California red-legged frog habitat will reduce these impacts to a less-than-significant level.

Seasonal Wetlands. The project site supports 0.32 acres of seasonal wetland habitat under the jurisdiction of the U. S. Army Corps of Engineers (USACE) and/or the Regional Water Quality Control Board (RWQCB). All of these seasonal wetland habitats on-site occur to the north of the Sand Creek riparian corridor, and will be filled as a result of the project.

Special-status Plants. A known population of round-leaved filaree (*California* (=*Erodium*) *macrophyllum*) occurs on the south side of the Sand Creek riparian corridor. This plant species is not state- or federally-listed as threatened or endangered, but is included on the California Native Plant Society's (CNPS) List 2 ("Plants rare, threatened, or endangered in California, but more common elsewhere"). All other special- status plant species having potential to occur on the site were determined to be absent from the site via protocol-level botanical surveys.

Vernal Pool Crustaceans. The 0.32 acres of seasonal wetlands to be filled on-site support potentially suitable habitat for vernal pool fairy shrimp (*Branchinecta lynchi*)(VPFS), and marginally suitable habitat for vernal pool tadpole shrimp (*Lepidurus packardi*)(VPTS). These species have not been observed on the site, however, protocol-level surveys to determine their absence on the site have not been conducted, therefore, these species are presumed to be present on the site.

California Tiger Salamander. Although California tiger salamanders (*Ambystoma californiense*)(CTS) have never been observed on the site, and the closest known occurrence of breeding CTS is more than 3600 feet south of the site, the seasonal wetlands of the site, in years of above average rainfall, as well as the 0.86-acre manmade detention channel on the site, may provide marginal breeding habitat for this species. Ground squirrel burrows on-site provide potential upland habitat for this species. As protocol-level surveys have not been conducted to confirm the absence of this species on the site, it is presumed that both breeding and upland habitat for CTS occurs on the site.

California Red-legged Frog. While the site lacks breeding habitat for California red-legged frogs (*Rana aurora draytonii*)(CRLF) based on habitat assessments conducted by both Dr. Mark Jennings and Monk & Associates (M&A), adults of this species have been observed in Sand Creek on the project site and immediately upstream of the project site, and have also been observed breeding approximately 3.2 miles upstream of the project site. Therefore, the entire Sand Creek channel on-site is considered CRLF habitat and CRLF may also utilize the manmade detention channel on-site during migration movements, although they have never been observed utilizing this latter feature.

Western Burrowing Owl. Non-native grassland habitats of the Aviano project site support a known population of western burrowing owls (*Athene cunicularia*)(BUOW), a state species of special concern. At least two nesting pairs of BUOW have been observed on-site consistently since 2002.

San Joaquin Kit Fox. The grasslands of the site also support suitable habitat for the San Joaquin kit fox (*Vulpes macrotis mutica*)(SJKF), although this species has not been observed within a 10-mile radius of the site since 1997. Protocol-level surveys to confirm the absence of this species on the site have not been conducted; therefore, it is presumed that this species may occur on the site from time to time.

4 PRESERVED LANDS AND SENSITIVE BIOLOGICAL RESOURCES COVERED UNDER THE RMP

This section describes both on-site and off-site lands that will be set-aside in perpetuity and managed for the benefit of sensitive biological resources under this RMP. Hereafter, these lands will collectively be referred to as "RMP lands". This section further describes the individual sensitive biological resources that will be preserved and managed for under the RMP on these lands.

On-site Open Space Preserve. The project proponent will be setting aside 35.9 acres of the project site as an Open Space Preserve. This acreage includes the Sand Creek riparian corridor with a set-back on the northern side which averages 100 feet from the top of the bank, and remaining lands to the south of the creek which supports predominantly non-native annual grassland on north-facing slopes. The preserve area does not include 2.5 acres for a potential future south access road and another 1.0 acre easement that has been granted to PG&E. The on-site Open Space Preserve will be managed as a preserve for round-leaved filaree, CRLF, BUOW, and SJKF.

Ralph Property. In addition to the on-site Open Space Preserve, the project proponent has purchased a205.6-acre property known as the Ralph Property in eastern Contra Costa County, of which 166.6 acres will be used as off-site mitigation for biological impacts resulting from the Aviano project. The Ralph property is located approximately two miles south of the Byron Airport, just outside the town of Byron, California. The 205.6-acre property is composed of two parcels: APN 001-031-018-3 (147.02 acres), and APN 001-031-019-1 (58.53 acres).

Per an agreement with CDFG in 2006, 39 acres of the 205.6-acre Ralph Property have already been designated as mitigation for impacts that occurred to burrowing owls at another of the project proponent's project sites in Oakley. As mitigation compensation for the Aviano project, the project proponent will donate the remaining 166.6 acres of the Ralph property to a qualified conservation organization to mitigate impacts to waters of the U.S. and State, and for habitat loss for the vernal pool fairy shrimp, vernal pool tadpole shrimp, California tiger salamander, California red-legged frog, western burrowing owl, and San Joaquin kit fox.

The 166.6 acres of the Ralph property that will be preserved as compensation for impacts to grassland and vernal pool special-status species is comprised of predominantly non-native grassland habitat (estimated at 136.6 acres), with the remaining acreage (estimated at 30 acres) supporting a mosaic of vernal pool, seasonal wetland channel, and seasonal alkali wetland habitats.

The Ralph site is within USFWS Critical Habitat for vernal pool crustaceans and within the mapped range of San Joaquin kit fox. The site supports known populations of four species of vernal pool crustaceans including the vernal pool fairy shrimp; breeding and upland habitat for the California tiger salamander; and breeding and overwintering habitat for burrowing owls. Additionally, occurrences of California red-legged frog have been documented upstream of the site in a seasonal channel that enters the site in the southwest corner.

Adding to the resource value of the site, the Ralph property is located just outside the 2,000 foot protection zone established around the Byron Airport. The site will become part of a much larger preservation complex with regional importance as identified in the East Contra Costa County Habitat Conservation Plan and Natural Community Preservation Plan (HCP), which indicates that there are already areas adjacent to the Ralph property that are preserved in perpetuity and whose resources will be managed for the benefit of native wildlife and plants (816 acres in airport; 121 acres in private mitigation bank). The Ralph property is immediately outside the indicated preserved areas and thus has regional significance as a property that can be added to existing preserved areas.

Based on information provided by M&A, information contained in the HCP, and on a reconnaissance-level site visit to the Ralph property by LOA staff in April 2007, the Ralph mitigation site appears to provide much higher habitat value for special-status animals than the project site itself.

Additional Off-site Land Preservation. In addition to the on-site and off-site RMP lands already identified as mitigation for project impacts to biological resources, the project proponent will be required to purchase and preserve an additional 315.4 acres of CTS habitat and 259.5 acres SJKF habitat, or to purchase equivalent mitigation credits in an established mitigation bank. If the project proponent purchases additional lands, as opposed to mitigation credits, such lands will also be subject to the provisions of this RMP.

Payment of Development Fees to the ECC HCP/NCCP Implementing Entity. As an alternative to purchasing land or purchasing habitat credits at a mitigation bank, the project applicant may negotiate to pay development fees to the East Contra Costa County Habitat Conservation Plan/Natural Community Conservation Plan (ECC HCP/NCCP) Implementing Entity. Fees would be paid according to a negotiated fee schedule mutually acceptable to the Implementing Entity, USFWS and CDFG.

5 MITIGATIONS FOR IMPACTS TO SENSITIVE BIOLOGICAL RESOURCES OF THE AVIANO PROJECT SITE

The following section includes a discussion of project impacts to sensitive biological resources that are identified in the Aviano Adult Community EIR, as well as the mitigations required by the EIR to reduce these impacts to the maximum extent possible.

Sand Creek Riparian Corridor. The Sand Creek riparian corridor will be preserved on-site in the Open Space Preserve area, with an average set-back of 100 feet. Although being constructed just outside the designated riparian set-back area, the proposed paved trail, detention basins and landscaped areas will impact areas well within 100 feet of the dripline of riparian vegetation or the edge of the bank, whichever is greater, in several locations. Therefore, mitigations for encroachment impacts have been included to reduce these impacts to a less-than-significant level. Additionally, two outfalls will impact approximately 0.03 acres of habitat within the channel. Mitigations have also been included to compensate for loss of habitat for the California red-legged frog and waters of the U.S. and State to reduce impacts from the outfalls to a less-than-significant level.

Seasonal Wetlands. All of the seasonal wetland habitats on-site (0.32 acres) occur to the north of the Sand Creek riparian corridor and will be filled as a result of the project. As mitigation for these impacts, the project proponent will be preserving approximately 30 acres of wetland habitats considered to be of greater value than those occurring on the project site, off-site on the Ralph property. Additionally, the project proponent will be creating 0.91 acres of wetland habitat off-site on the Ralph Property.

The preservation of 30 acres of wetlands and creation of 0.91 acres of wetlands off-site on the Ralph Property will reduce impacts to wetland habitat on the project site to a less-than-significant level.

Special-status Plants. The population of round-leaved filaree occurring on the project site will be preserved on-site in the Open Space Preserve area, therefore, the project was considered to have a less-than-significant impact on this species.

Vernal Pool Crustaceans. The project will result in the loss of 0.32 acres of seasonal wetlands that support suitable habitat for vernal pool fairy shrimp (*Branchinecta lynchi*)(VPFS), and marginally suitable habitat for vernal pool tadpole shrimp (*Lepidurus packardi*)(VPTS). These species have not been observed on the site, however, protocol-level surveys to determine their absence on the site have not been conducted , therefore, these species are presumed to be present on the site.

To mitigate for the loss of 0.32 acres of potential habitat for vernal pool crustaceans on the project site, the project proponent will be preserving approximately 9 acres of known habitat for four species of vernal pool crustaceans off-site on the Ralph Property. This will reduce project impacts to potential habitat for vernal pool crustaceans to a less-than-significant level.

California Tiger Salamander. The project will result in the loss of 0.32 acres of seasonal wetlands and 0.86 acres of manmade detention channel that provide potential but marginal

breeding habitat for CTS (totaling 1.18 acres), and 152.8 acres (145.4 on-site and 4.4 off-site) of potential upland habitat, totaling 154 acres of combined breeding and upland habitat. While 35.9 acres of predominantly grassland habitat will be preserved on-site, long-term connectivity of the on-site preserve area to breeding habitat for this species is not assured, and, therefore, on-site preserved lands are not considered suitable as a preserve for this species.

To mitigate for the loss of 1.18 acres of potential CTS breeding habitat on-site, the project proponent will be preserving approximately 10 acres of wetlands that are either known to be CTS breeding habitat, or which have the proper hydrology to support breeding CTS, on the Ralph Property. This measure was determined by the EIR to be sufficient to mitigate the loss of breeding habitat on-site to a less-than-significant level.

To mitigate for the total loss of 154 acres of potential breeding and upland habitat combined as a result of the project, the project proponent will be required to preserve a total of 462 acres of such habitat (1:3 loss:preservation ratio). The project proponent has already purchased and will be preserving 146.6 acres of such habitat on the Ralph Property (136.6 acres of upland habitat and 10 acres breeding habitat). Additionally, the project proponent will be required to either purchase and preserve another 315.4 acres of upland habitat, or to purchase equivalent credits at an established mitigation bank that includes Antioch in its service area, or that occurs within an area that the East Contra Costa Multi-Species Habitat Conservation Plan (HCP) identifies as having good conservation value (i.e., suitable areas in eastern Alameda County). Alternatively, the project proponent may negotiate to pay development fees to the East Contra Costa County Habitat Conservation Plan/Natural Community Conservation Plan (ECC HCP/NCCP) Implementing Entity. Fees would be paid according to a negotiated fee schedule that is mutually acceptable to the Implementing Entity, USFWS and CDFG.

The off-site preservation of 462 acres of upland and breeding habitat for this species will reduce the impact to CTS habitat as a result of the project to a less-than-significant level.

California Red-legged Frog. While the majority of the Sand Creek channel on-site will be preserved within a riparian buffer, the project will result in the loss 0.03 acres of known CRLF habitat within Sand Creek as the result of the construction of two outfalls, and 0.86 acres of detention channel providing potential but marginal migration habitat for CRLF. Additionally, the construction of the 12-foot wide paved trail, detention basins and landscaped areas will result in encroachment impacts well within 100 feet of the dripline of riparian vegetation or the bank of the creek, whichever is greater, in several locations.

To mitigate the loss of 0.89 acres of migration habitat for this species, as well as encroachment impacts, the project proponent will be preserving approximately 1.0 acre of CRLF migration habitat on-site within Sand Creek, will conduct a Riparian Enhancement effort, planting native riparian trees and shrubs within the riparian set-back area, and will create 0.91 acres of breeding habitat off-site on the Ralph Property, which in turn will result in an enhancement of that site as migration habitat for the species.

The on-site preservation and enhancement of riparian habitat, along with the off-site creation of breeding habitat for CRLF will reduce the impacts to CRLF migration habitat on the project site to a less-than-significant level.

Western Burrowing Owl. The project will result in the loss of 149.6 acres of nesting and/or foraging habitat for BUOW, while preserving 35.9 acres of such habitat on-site in the Open Space Preserve area that will be managed to benefit this species in perpetuity.

Additionally, the project proponent will be preserving 166.6 acres of known breeding and foraging habitat that will be managed for this species off-site on the Ralph Property.

The on-site preservation of breeding and foraging habitat, along with the off-site preservation of such habitat for BUOW on the Ralph Property that will be managed for this species will reduce the impacts to BUOW habitat on the project site to a less-than-significant level.

San Joaquin Kit Fox. The project will result in the loss of 154 acres of grasslands providing potential habitat for SJKF, while preserving 35.9 acres of such habitat on-site in the Open Space Preserve area that will be managed to benefit this species in perpetuity.

To mitigate for the loss of 154 acres of potential SJKF habitat as a result of the project, the project proponent will be required to preserve 462 acres of SJKF habitat (1:3 loss:preservation ratio). The project proponent is preserving 35.9 acres of habitat on-site and another 166.6 acres of such habitat on the Ralph Property. Additionally, the project proponent will be required to either purchase and preserve another 259.5 acres of such habitat, or to purchase equivalent credits at an established mitigation bank that includes Antioch in its service area, or that occurs within an area that the East Contra Costa Multi-Species Habitat Conservation Plan (HCP) identifies as having good conservation value (i.e., suitable areas in eastern Alameda County). Alternatively, the project proponent may negotiate to pay development fees to the East Contra Costa County Habitat Conservation Plan/Natural Community Conservation Plan (ECC HCP/NCCP) Implementing Entity. Fees would be paid according to a negotiated fee schedule mutually acceptable to the Implementing Entity, USFWS and CDFG.

The on-site and off-site preservation of 462 acres of grassland habitat that will be managed in-perpetuity for this species, or the purchase of either the equivalent mitigation bank credits or payment of applicable development fees to the ECC HCP/NCCP, will reduce the impact to SJKF habitat on the project site to a less-than-significant level.

6 GENERAL PROVISIONS APPLICABLE TO BOTH ON-SITE AND OFF-SITE RMP LANDS

The following section provides general provisions which are applicable to all on-site and off-site preserved lands covered under this RMP, including, but not limited to, the mechanisms for in-perpetuity conservation of RMP lands; funding for on-going preservation; allowed and prohibited uses; weed and litter management; and fencing requirements.

Preservation and Management of On-site and Off-site Preserves In Perpetuity. The project proponent shall transfer fee title to both on-site and off-site preserved lands to a qualified conservation organization or government entity at least six months prior to the on-set of development activities on the Aviano site, so as to allow the project proponent time to determine endowment costs with the conservation organization(s) involved.

The project proponent will establish an endowment to the qualified conservation organization(s) or government entity (hereafter referred to as the "Conservator") that will be held in a permanent, non-wasting trust account by the Conservator, the interest from which shall be used by the Conservator to manage and maintain the on-site and off-site preserves as set forth in this Plan. The Conservator will record a permanent deed restriction over the preserved lands to ensure that the RMP becomes a part of the deed to the land and that it runs with the title of the land in perpetuity.

Allowed Activities. The following activities are allowed on both on-site and off-site preserved lands covered by this RMP, unless expressly prohibited by a Biological Opinion or the Conservation Easement Deed:

1. Grazing shall be allowed, provided that a Grazing Management Plan is prepared for each preserve site by a certified rangeland manager that specifies important grazing parameters including but not limited to stocking rates, residual dry matter, and timing of grazing. Monitoring methods will also be stipulated in the plan. The desired condition is as a short-grass preserve. This can be achieved by moderate grazing pressure.

2. Access to the Ralph Property shall be limited to the Conservator or its agents for wildlife and plant monitoring activities, occasional maintenance activities associated with ranching including the distribution and collection of farm animals; for management and maintenance of the site in its naturalized condition; or for scientific study purposes.

3. State and federal resource agencies shall have access with adequate (24 hours) notice to the Conservator for the purpose of inspecting the site's natural resources and monitoring the status and effectiveness of management practices.

4. The Conservator may access the property as necessary to manage and otherwise maintain the site in its naturalized condition.

5. The Conservator may grant permission to parties to access the site for scientific study purposes only.

6. Existing pipelines and easements may continue to be maintained.

7. Wetlands may be created and maintained in a manner consistent with the mitigation requirements imposed in permits issued to the project by USACE and RWQCB, and according to the terms of the Biological Opinion or 2081 permit issued for the project.

8. Existing structures, fences, ditches, pumps, and other improvements may be maintained and repaired. Additional fencing or water troughs necessary to manage cattle as stipulated in the Grazing Management Plan may be installed and maintained. Such features will be installed in a way to prevent damaging or degrading of natural habitats on the site.

9. Feral horses or horses that have been retired from active human use are allowed to graze on the Ralph Property provided that the effects of their grazing have been factored into the terms of the Grazing Management Plan.

10. The Ralph Property may be used for the conservation of wildlife or plant habitat including the development or maintenance of wetland areas.

Prohibited Activities. The following activities are prohibited on both on-site and off-site preserved lands covered by this RMP, unless expressly required or permitted by a Biological Opinion or the Conservation Easement Deed:

1. Leveling, grading, landscaping, cultivation, or any other alterations of existing topography for any purposes, including the exploration for, or development of, mineral resources, except as required for permitted wetland or habitat creation as stipulated in permits from USACE, RWQCB, USFWS, and CDFG.

2. Placement or construction of any new structures, including buildings, fences not required for management of grazing livestock in the Grazing Management Plan, and billboards.

3. Any agricultural, commercial, residential or industrial use or activity except for grazing.

4. Any use by dogs or other pets.

5. Discharge, dumping, burning, or storing of rubbish, garbage, grass clippings, dredge material, household chemicals, or any other wastes or fill materials.

6. The operation of any motorized vehicle for any purpose, except for emergency use, fire control, or for maintenance, repair and restoration of preserved lands or permitted facilities as set forth in the RMP or any Biological Opinion.

7. Activities that may alter the hydrology of the preserved lands and the associated watersheds (except that required for permitted wetland creation), including but not limited to: excessive pumping of groundwater, manipulation or blockage of natural drainages, inappropriate water application or placement of storm water drains, unless authorized in writing by the USFWS and CDFG.

8. The pruning, felling, or other destruction or removal of dead or living native vegetation, except as needed to control or prevent hazards, disease, or fire.

9. Conducting fire protection activities, including the creation of fire breaks, that may adversely impact preserved lands, unless the following criteria are satisfied:

    i) The location of any fire break is approved by the USFWS, CDFG, Conservator, and fire department.

    ii) The fire break does not exceed the minimum required width.

    iii) Mowing (not discing) is used for fire break creation.

10. Use of pesticides, herbicides, or rodenticides by the project proponent on the preserved lands, except as authorized in writing by the USFWS and CDFG.

11. Introduction of any exotic species or species not native to the area, including aquatic species, except as authorized in writing by the USFWS and CDFG.

Weed Monitoring and Management. A managed, predator-friendly grazing regime as implemented by East Bay Regional Parks (see Grazing Management Plan section below) should be adequate to curtail the growth of noxious invasive weeds such as yellow-star thistle (*Centaurea solstitialis*) and Italian thistle (*Carduus pycnocephalus*) on RMP lands. However, additional eradication methods may be required should noxious weed species become established on RMP lands and begin to threaten or displace the annual grasslands that support or have potential to support CTS upland habitat or BUOWs or their habitat.

The RMP lands will be monitored twice annually during April and June for the presence of noxious weed species, and appropriate additional measures will be taken to eradicate these species should they threaten to displace sensitive native plant species or habitat for sensitive wildlife species.

Appropriate weed eradication methods on RMP lands will be limited to hand pulling, the use of weed eaters, mowing, or goat grazing. Weed seedlings can often be hand pulled, but established plants may require alternate treatments. Hand pulling of many weed species is ineffective, due to their ability to regenerate from root fragments. Invasive exotics that are allowed to establish frequently require repeated control efforts. Control efforts should always be undertaken before the weeds can bloom and set seed, but if they have begun blooming, flowers and/or seeds should be carefully bagged and disposed of legally.

A wide array of treatments is available to control weeds, including manual methods and mechanical methods (e.g., pulling, mowing, weed-eaters). The use of chemical eradication methods will not be permitted within the RMP lands unless other methods have been shown to be ineffective. The use of such chemical methods must be authorized in writing by USFWS and CDFG.

Fencing. To avoid inappropriate off-road vehicular use of RMP lands, fencing will be installed along the perimeters of RMP lands. Additional fencing may be required should it be determined

that cattle are impacting sensitive resources on RMP lands such as rare plants, wetlands, or riparian areas; or to effectively manage grazing units as determined by a certified rangeland manager and described in the Grazing Management Plan. Fencing will be split-rail fencing, barbed wire, or other fencing that does not hinder wildlife from using or moving through the site.

The integrity of all fencing, and any other structures required on RMP lands under the RMP, a Biological Opinion and/or deed restriction, will be assessed no less than once annually by the Conservator or project proponent (whichever currently has responsibility for monitoring and reporting tasks on the site in question). Any necessary repairs will be carried out within 30 days by the responsible party.

Litter. RMP lands will be monitored no less than four times annually for accumulation of trash and litter by the Conservator or project proponent (whichever currently has responsibility for monitoring and management tasks on the site in question). All trash and litter will be removed by the responsible party within 30 days.

7 WETLAND CREATION, MONITORING AND MANAGEMENT

Seasonal Wetland Creation. To mitigate for the loss of 0.32 acres of seasonal wetlands on the Aviano project site, and to comply with permit conditions set forth by USACE and RWQCB, the project proponent will create 0.91 acres of seasonal wetland habitat on the Ralph Property. The created wetlands will also be utilized by the project proponent as mitigation for the loss of CRLF migration habitat on the Aviano project site, and, therefore, these wetlands will be created, monitored and managed to provide breeding habitat for this species.

The size and configuration of created wetlands on the Ralph site will be dependant on the presence of appropriate topography and the available water budget for the site. A hydrologist experienced in creating seasonal wetlands/vernal pools will evaluate the opportunities on the site by appropriately modeling and designing all created wetland features. The assumption of the created wetlands is that a sufficient water budget exists to support the proposed feature without compromising any other wetlands on-site or within the watershed of the site. The types of wetland plants installed at the site will be dependent upon the type of wetland feature designed for the site.

Wetland Mitigation and Monitoring Plan. The project proponent shall develop a minimum 5-year Wetland Mitigation and Monitoring Plan in consultation with USACE and RWQCB for created wetlands. A copy of the monitoring plan will be provided to USACE, RWQCB, the Conservator, and the City of Antioch. The wetland monitoring plan will contain, at a minimum, the following elements:

- Specific, measurable annual performance criteria and final success criteria, as well as the protocol by which these criteria will be measured. At a minimum, the final success criteria will include the establishment of a preponderance (greater than 50%) of vegetation in the created wetland having a USFWS wetland indicator of FAC, FACW or OBL.
- An adaptive management plan with specific remedial actions to be taken by the project proponent should the created wetlands not meet the minimum annual performance criteria or the final success criteria set forth in the plan. This will include additional annual monitoring of the wetlands by the project proponent beyond the minimum 5-year monitoring period until they meet the established final success criteria of the plan.
- The preparation of an initial "as-built" report at the completion of wetland construction, and the preparation of annual monitoring reports at the end of each monitoring period. A copy of the "as-built" report and annual monitoring reports shall be provided to USACE, RWQCB, the Conservator, and the City of Antioch.

8 CALIFORNIA RED-LEGGED FROG HABITAT CREATION, MONITORING, AND MANAGEMENT

CRLF Habitat Creation. To provide appropriate breeding habitat for CRLF, the 0.91 acres of created wetland habitat on the Ralph Property will be designed by the qualified hydrologist so that in years of average rainfall they will be sufficiently inundated to allow adult CRLF to lay eggs, and to remain sufficiently inundated for CRLF larvae to metamorphose to the adult stage (i.e. until the end of August). However, the wetlands shall also be designed to go completely dry for a minimum of two weeks during the fall to ensure that fish and bullfrogs which predate on CRLF are not allowed to become established. In the event that CRLF predators such as fish and/or bullfrogs do become established in the created wetlands in the future, the wetlands will be designed so that they can be drained as necessary to control these predators (this is discussed further below in the Pond Predator Management Plan).

CRLF Habitat Monitoring and Management Plan. The project proponent will develop an in perpetuity monitoring and management plan for CRLF on RMP lands. A copy of the Plan will be provided to the USFWS, CDFG, the Conservator, and the City of Antioch. The plan will contain, at a minimum, the following elements:

- Twice annual monitoring of the integrity of created wetlands on the Ralph Property, in March and September, to ensure that any structures such as constructed berms, valves, spillways are functioning properly.
- Monthly monitoring of water levels in created wetlands on the Ralph Property, between March and September, to ensure that ponds have the appropriate hydrology to support breeding and larval development habitat for CRLF.
- Annual monitoring of the created pond habitat on the Ralph Property for CRLF eggs, tadpoles, and adult frogs. Visual surveys for each life stage shall be implemented at least once per season (minimum of three annual visits – one visit in winter for eggs, one visit in spring/summer for tadpoles, one additional visit in winter, spring, or summer for adults). Results of the monitoring will be reported to the USFWS, CDFG, and City of Antioch in the annual report.
- An adaptive management plan with specific remedial actions to be taken should created wetland habitat on the Ralph Property be determined not to be functioning properly. Any repairs or modifications to the created wetlands requiring the use of heavy equipment will first be authorized in writing by USACE, RWQCB, USFWS, and CDFG.
- Preparation of an annual report outlining findings from the monitoring of created wetlands on the Ralph Property including any adaptive measures (repairs, modifications) that were required. A copy of the report shall be provided to USFWS, CDFG and the City of Antioch if requested.
- Once annual monitoring of the Sand Creek riparian corridor in the on-site Open Space Preserve for impacts that may adversely affect CRLF habitat in the creek including erosion, grazing impacts, and pollution impacts.

- Once annual monitoring of the Sand Creek riparian corridor in the Open Space Preserve for CRLF. As breeding habitat does not occur in this reach of the creek, the creek will be surveyed annually for the presence of adult CRLF using standard survey protocols. Results of the survey will be included in the annual monitoring report to the City, USFWS, and CDFG.
- Preparation of an annual report outlining findings from the annual monitoring of Sand Creek, including any recommendations to remedy adverse impacts to the creek. A copy of the report shall be provided to USFWS, CDFG and the City of Antioch if requested.

Contingency Pond Predator Management Plan. In addition to the above, the project proponent shall develop a Contingency Pond Predator Management Plan for created CRLF habitat on the Ralph Property. At this time, bullfrogs and fish that prey on native amphibians are not known to occur on the Ralph Property, however, these could become established on the site in the future. At a minimum, this Plan will include the following elements:

- Twice annual monitoring of created CRLF habitat for the presence of fish, adult bullfrogs, and/or bullfrog larvae.
- A specific protocol for the control of fish and bullfrog larvae through pond draining. Although it is intended that wetlands be created with the appropriate hydrology (i.e. drying completely in the fall in normal rainfall years) to ensure that fish and bullfrog larvae do not become established, potentially, if several years of above average rainfall occur sequentially, these predators could become established. Pond draining would only occur should it be determined that these predators are having an adverse impact on CRLF or CTS populations on the Ralph Property. Pond draining, if implemented, will typically occur in October when such activities would have the least disruption on sensitive resources utilizing the created wetlands, however, the date may be adjusted within the late fall period to account for annual weather patterns.
- A specific plan for the control of adult bullfrogs including the capture and euthanization of adult bullfrogs by a qualified biologist.
- Preparation of an annual report outlining any pond predator management activities occurring on the Ralph Property. The report will be provided to the USFWS, CDFG, and City of Antioch, at their request.

On-site Riparian Enhancement Plan. The project proponent shall be responsible for preparing and carrying out an on-site Riparian Enhancement Plan that will mitigate riparian encroachment impacts. The project proponent shall provide the City with a map showing the extent of the encroachment of project development, including the detention basins, landscaped areas, and trail that occur within 100 feet of the dripline of riparian vegetation or the creek bank, whichever is greater, as well as the acreage of such encroachment. The project proponent shall mitigate such encroachment impacts by enhancing riparian habitat within the on-site preserved riparian set-back area at a 1:1 (encroachment:enhancement) ratio by planting riparian trees and shrubs. At a minimum, this Plan will contain the following elements:

- A Planting Plan which provides the location of on-site Enhancement Areas and the number, location, planting container size, and species of trees and shrubs to be utilized in the enhancement effort.
- A Maintenance Plan which provides details on irrigation, weed abatement and other maintenance activities to be conducted in the Enhancement Area(s) during the monitoring period.
- A Monitoring Plan which provides specific measurable performance and final success criteria, and the methods that will be used to monitor these criteria. Performance criteria shall be monitored on an annual basis for a minimum of five years. The Monitoring Plan shall also include specific remedial actions to be taken should annual monitoring indicate that the Enhancement Area is not meeting the annual performance criteria during each annual monitoring period, or doesn't meet the final success criteria at the end of the minimum 5-year monitoring period.
- Results of the annual monitoring effort and any remedial actions to be taken to rectify situations where the Enhancement is not meeting the annual performance criteria or final success criteria shall be provided to the City via an annual monitoring report. One of the remedial actions will include an extension of the monitoring period until the final success criteria are met.

9 GRASSLAND MANAGEMENT PLAN

Management of grassland habitat on RMP lands will consist primarily of a predator-friendly, winter-spring grazing regime as practiced by East Bay Regional Parks. Grazing benefits a number of special-status species such as those targeted for conservation on both on-site and off-site RMP lands. Therefore, a moderate grazing regime is not only consistent with the objectives set forth in the City of Antioch's General Plan, but can be used to optimize the habitat value for the target species on preservation lands. Grasses must be kept short as CTS, BUOW and SJKF must be able to move freely and observe predators. A managed grazing regime (allowing a moderate level of grazing) will keep grasses at an optimal height to benefit these species. Managed grazing will also reduce the likelihood that invasive weeds will be become established within RMP lands. As such, the project proponent shall hire a certified rangeland manager to develop a Grazing Management Plan for RMP lands that will be provided to and approved by the USFWS, CDFG, and City.

Objectives of the Grazing Management Plan. Objectives of the Grazing Management Plan include:

- Preservation of herbaceous cover at a density and height that promotes the establishment and maintenance of populations of ground squirrels necessary to support targeted special-status grassland animals. This will include keeping grasses at a minimum height of 3 inches and maximum height of 12 inches.
- Promote even grazing pressure over RMP grasslands so that there are no overgrazed and/or undergrazed areas.
- Discourage the growth of undesirable non-native invasive plants.
- Reduce fire hazards associated with excessive thatch cover.
- Minimize erosion potential of grazed areas by leaving ample vegetative cover.
- Reduce or eliminate grazing impacts to wetlands and most stream zone areas.
- Promote a cooperative working relationship between the Conservator and the grazing lessee/rancher implementing the grazing plan.

Required Elements of the Grazing Management Plan. The project proponent will develop a Grazing Management Plan sufficient to meet the above objectives. A copy of the Plan will be provided to the USFWS, CDFG, the Conservator, and the City of Antioch. At a minimum, this Plan will include the following elements:

- Preparation of the Plan by a certified rangeland manager.
- The initial stocking rate for each RMP site, including a justification of the initial rate.
- The specific protocol for how RMP grasslands will be monitored to ensure the specified objectives of the grazing plan are met, including which parameters will be measured and how they will be measured. These parameters will include grass height and grazing impacts to sensitive habitats such as wetlands and riparian areas.

- An initial 5-year grazing monitoring period during which grasslands will be monitored a minimum of five times annually (in March, April, May, June, and July). The objective of the intensified 5-year period will be to determine optimum stocking rates. After the initial 5-year period, grazing will be monitored a minimum of once annually to ensure objectives of the plan are met in perpetuity.
- Preparation of an annual report with findings from the annual monitoring, including recommendations for adjustments to stocking rates and any need for additional fencing to exclude stock from sensitive habitats. The annual report will be provided to USFWS, CDFG, the Conservator, and the City of Antioch at their request.
- An adaptive management plan with remedial actions that will be taken should the monitoring indicate that the objectives of the Plan are not being met.

10 RESPONSIBILITIES OF THE PROJECT PROPONENT AND CONSERVATOR

Responsibilities of the Project Proponent. The responsibilities of the project proponent under the RMP are discussed below.

Construction of Wetlands, Fencing and Other Required Structures. Prior to turning over management responsibilities to the Conservator, the project proponent will be responsible for the construction of required mitigation wetlands, and for the construction of any fencing or other structures (signs, kiosks, etc.) on RMP lands as required by the RMP, Biological Opinion, or any deed restriction requirement. Prior to turning over management responsibilities to the Conservator, these features will be confirmed to be in good repair by both the project proponent and the Conservator.

Short-term Monitoring and Management of the Ralph Property. The project proponent will be responsible for all short-term monitoring and management activities on the Ralph Property. The short-term monitoring and management period will be for a minimum of five years, and until the created wetlands on the Ralph Property meet the final success criteria set forth in the Wetland Mitigation and Monitoring Plan. Once the final success criteria for created wetlands has been achieved, the Conservator will take over long-term in perpetuity monitoring and management of the Ralph Property.

Short-term monitoring and management activities on the Ralph Property for which the project proponent will be responsible include all of the following:

- Twice annual monitoring (April and June) for noxious weeds, and any necessary weed management activities.
- Once annual monitoring and repair or replacement of fencing, and other required structures, on the site.
- Four times annual monitoring and removal of litter from the site.
- Once annual monitoring of created wetlands as required under the Wetland Mitigation and Monitoring Plan.
- Monthly monitoring (March through September) of created wetlands for integrity and inundation as required under the CRLF Habitat Mitigation and Monitoring Plan.
- Annual monitoring (3 visits) for CRLF eggs, tadpoles, and adult frogs as required under the CRLF Habitat Management and Monitoring Plan.
- Implementation of the Contingency Pond Predator Management Plan including twice annual monitoring of created wetland for pond predators and necessary management activities.
- Required monitoring and management of grasslands under the Grazing Monitoring and Management Plan including monitoring of the grasslands five times annually (March, April, May, June, and July) for the first five years and then at least once annually until the Conservator assumes management of the site.

- Preparation of any reports during the short-term monitoring and management period including, but not limited to, those required under the Wetland Mitigation and Management Plan, CRLF Habitat Monitoring and Management Plan, and the Grazing Management Plan.

Short-term Monitoring and Management of the On-site Open Space Preserve and Other RMP Lands (excluding Ralph Property). The project proponent will be responsible for short-term monitoring and management of both the on-site Open Space Preserve, and any additional RMP lands purchased by the project proponent in the future, until such time that all required fencing and other required infrastructure (signs, kiosks, etc.) have been constructed by the project proponent. Once all required fencing and any other required infrastructure has been constructed, the Conservator will assume long-term, in perpetuity monitoring and management of these lands. Short-term monitoring and management activities on these RMP lands will include the following:

- Twice annual monitoring (April and June) for noxious weeds, and any necessary weed management activities.
- Once annual monitoring and repair or replacement of fencing, and other required structures, on the site.
- Four times annual monitoring and removal of litter from the site.
- Once annual monitoring of the Sand Creek riparian corridor in the on-site Open Space Preserve for impacts that may adversely affect CRLF habitat.
- Annual monitoring of the Sand Creek riparian corridor in the Open Space Preserve for CRLF. As breeding habitat does not occur in this reach of the creek, the creek will be surveyed annually for the presence of adult CRLF using standard survey protocols. Results of the survey will be included in the annual monitoring report to the City, USFWS, and CDFG.
- Required monitoring and management of grasslands under the Grazing Monitoring and Management Plan including monitoring of the grasslands five times annually for the first five years, and then at least once annually until the Conservator assumes management of the site.
- Preparation of any reports during the short-term monitoring and management period including, but not limited to, those required under the CRLF Habitat Monitoring and Management Plan and the Grazing Management Plan.
- Once annual monitoring of the Sand Creek riparian corridor in the on-site Open Space Preserve for impacts that may adversely affect CRLF habitat in the creek including erosion, grazing impacts, and pollution impacts.
- Once annual monitoring of the on-site Riparian Enhancement areas as required under the Riparian Enhancement Plan.

Responsibilities of the Conservator. The responsibilities of the Conservator under the RMP are discussed below.

Long-term In Perpetuity Monitoring and Management of the Ralph Property. Once the created wetlands on the Ralph Property have been determined to have met the final success criteria, monitoring and management responsibilities on the site will be assumed by the Conservator, including:

- Twice annual monitoring (April and June) for noxious weeds, and any necessary weed management activities.
- Once annual monitoring and repair or replacement of fencing, and other required structures, on the site.
- Four times annual monitoring and removal of litter from the site.
- Monthly monitoring (March through September) of created wetlands for integrity and inundation as required under the CRLF Habitat Mitigation and Monitoring Plan.
- Annual monitoring (3 visits) for CRLF eggs, tadpoles, and adult frogs as required under the CRLF Habitat Management and Monitoring Plan.
- Implementation of the Contingency Pond Predator Management Plan including once annual monitoring of created wetland for pond predators and necessary management activities.
- Required in-perpetuity monitoring and management of grasslands under the Grazing Monitoring and Management Plan including monitoring of the grasslands at least once annually.
- Preparation of any reports including, but not limited to, those required under the CRLF Habitat Monitoring and Management Plan and the Grazing Management Plan.

Long-term In Perpetuity Monitoring and Management of the On-site Open Space Preserve and Other RMP Lands. Once the project proponent has constructed all required fencing and any other required infrastructure, monitoring and management responsibilities will be assumed by the Conservator, including:

- Twice annual monitoring (April and June) for noxious weeds, and any necessary weed management activities.
- Once annual monitoring and repair or replacement of fencing, and other required structures, on the site.
- Four times annual monitoring and removal of litter from the site.
- Once annual monitoring of the Sand Creek riparian corridor in the on-site Open Space Preserve for impacts that may adversely affect CRLF habitat.
- Once annual monitoring of the Sand Creek riparian corridor in the Open Space Preserve for CRLF. As breeding habitat does not occur in this reach of the creek, the creek will be surveyed annually for the presence of adult CRLF using standard survey protocols.

Results of the survey will be included in the annual monitoring report to the City, USFWS, and CDFG.

- Required in-perpetuity monitoring and management of grasslands under the Grazing Monitoring and Management Plan including monitoring of the grasslands five times annually for the first five years, then at least once annually in perpetuity.
- Required annual monitoring of on-site Riparian Enhancement Areas until final success criteria have been achieved as required under the Riparian Enhancement Plan.
- Preparation of any reports including, but not limited to, those required under the CRLF Habitat Monitoring and Management Plan and the Grazing Management Plan.

APPENDIX L

WATER SUPPLY ASSESSMENT

201 North Civic Drive, Suite 115
Walnut Creek, California, 94596

Tel: 925-937-9010
Fax: 925-937-9026

www.brownandcaldwell.com

February 27, 2008

BROWN AND CALDWELL

Ms. Nina Oshinsky
Deputy Director of Community Development
City of Antioch
Third & "H" Streets
Antioch, California 94531-5007

1011.133261.100/3

Subject: FINAL Water Supply Assessment, Aviano Adult Community Project

Dear Ms. Oshinsky:

In partial completion of the June 11, 2007 agreement authorized by the City of Antioch, Brown and Caldwell is pleased to submit fifteen (15) copies of the enclosed Final Water Supply Assessment for the Aviano Adult Community Project. It has been a pleasure working with you and City staff, and I look forward to many more opportunities to serve the City in the future.

If you have any questions, please feel free to telephone me at 925.210.2453.

Very truly yours,

Wynn Yin
Project Manager

WY\dt

cc: Mr. Bill Faisst, Brown and Caldwell w/o enclosure

Enclosures (15)

FINAL

WATER SUPPLY ASSESSMENT FOR AVIANO ADULT COMMUNITY PROJECT

Prepared for
The City of Antioch
February 2008

FINAL

WATER SUPPLY ASSESSMENT FOR AVIANO ADULT COMMUNITY PROJECT

Prepared for
The City of Antioch

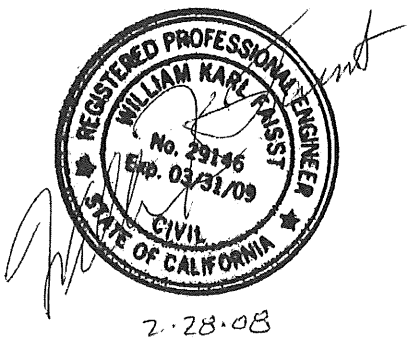
February 2008

Prepared by

BROWN AND CALDWELL

201 N. Civic Drive
Walnut Creek, California 94596

BC PROJECT NUMBER 1011.133261



2·28·08

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WATER SUPPLY ASSESSMENT FOR AVIANO ADULT COMMUNITY PROJECT

EXECUTIVE SUMMARY

This document presents the water supply plan for the Aviano Adult Community Project (Aviano or Aviano Project) and for the City of Antioch (City), including additional demands from the Aviano Project. Topics addressed include the City's supply sources and quantity; projected demands for the Aviano Project; City water requirements without and with the Aviano Project; and an assessment of supply vulnerability.

Sources of Supply

The City's current and potential sources of water supply include the following:

- **San Joaquin River.** The City draws from the San Joaquin River whenever salinity is sufficiently low. The City has pumped no water during drought years, but more than 300 days per year in wet years. The historical annual average is about 208 days. At the maximum available diversion rate or 16 million gallons per day (mgd), this is equivalent to about 10,200 acres per feet (ac-ft) annually. However, as the salinity increases in the river, on some days the City only pumps part of the day. Furthermore, the City's average daily demand during wet periods when river pumping occurs is less than 16 mgd (i.e., about 10 mgd in January and February 2005). Once the municipal reservoir is full, the City can only divert what it can use. Hence, a typical annual diversion of 7,550 ac-ft is more reasonable on a long-term basis. This water right is a pre-1914 right, with no limitation (other than quality). The City's river diversion facilities (intake screen, pump, and pipeline) have a maximum capacity of 16 mgd.
- **Contra Costa Water District (CCWD).** The City pumps raw water from the Contra Costa Canal and also purchases some treated water from the CCWD Multipurpose Pipeline per a contract between the City and CCWD dated July 5, 2000. CCWD has a contract through the United States Bureau of Reclamation (USBR) Central Valley Project (CVP) for up to 195,000 ac-ft per year. CCWD has also developed long-term plans to purchase additional water rights as the demand from its customers exceeds the current CVP contract amount. CCWD also stores up to 100,000 ac-ft in its Los Vaqueros Reservoir. It uses this water for water quality and maintenance and as an emergency supply. According to its Future Water Supply Study 2002 Update Final Report (FWSS) based on projected City needs at build out, CCWD has planned for City of Antioch water demands of about 29,200 ac-ft in 2030 and 30,850 ac-ft in 2050. The Preferred Alternative, as outlined in the FWSS, provides drought reliability and operational flexibility in the short-term while maintaining long-term supply targets to meet projected demands. The Preferred Alternative includes such actions as implementation of an expanded District-wide conservation program and the completion of two or more water transfers to meet future demand. Drought years would reduce the available supply as discussed below.
- **Municipal Reservoir.** This facility serves principally to store water pumped from the San Joaquin River and the Contra Costa Canal. In an average rainfall year, it also captures runoff of up to 750 ac-ft. In drought years the runoff would decrease substantially. The estimated runoff volume is 250 ac-ft in an average year.

Water Demands for the Aviano Project

To estimate the potential water demand for the Aviano Project at 100 percent build out, water use factors for each constituent in each end use category were obtained from several sources, particularly the Handbook of

Water Use and Conservation (Vickers, 2001). Project demands, based on senior occupancy, are summarized as follows in Table ES-1.

Table ES-1. Proposed Development Projected Annual Water Demands by End Use

End Use	Daily Water Demand (gpd)	Annual Water Demand (gal/yr)	Annual Water Demand (acre-ft/yr)
Single-Family Residences	140,779	51,384,189	157.7
Recreational Facility	796	290,624	0.9
Parks & Landscaping	77,401	28,251,245	86.7
Water Quality Features	0	0	0.0
Open Space	1,924	702,419	2.2
Total	**220,900**	**80,628,478**	**247**

City Water Requirements Without and With the Aviano Project

Based on the Notice of Preparation of a Draft Environmental Impact Report prepared for the Aviano Adult Community Project, Brown and Caldwell, working with City staff, has developed projected water use for the City with and without the Aviano Adult Community Project. Projected water demands for the Aviano project site, based on previous land use designations provided in the City of Antioch Urban Water Management Plan, are calculated and presented for comparison as well. City build out is assumed to occur in 2036 based on Association of Bay Area Governments projections. Table ES-2 presents those estimates assuming that the Aviano Adult Community Project would be 100 percent built out by 2012.

Table ES-2. Estimate of City Water Requirements Without and With the Aviano Project

	Annual Water Demand, ac-ft					
Year	Aviano Project (per this WSA)	Aviano Project (per UWMP)	City Without Aviano Project (per this WSA)	City Without Aviano Project (per UWMP)	New City-Wide Total (based on this WSA)	Original City-Wide Combined Total (per UWMP)
2012	247	377	22,268	22,138	22,385	22,515
2017	247	377	23,421	23,291	23,538	23,668
2022	247	377	24,574	24,444	24,691	24,821
2027	247	377	25,727	25,597	25,844	25,974
2032	247	377	26,880	26,750	26,997	27,127
2037	247	377	29,186	29,056	29,303	29,433

These projections represent an upper limit for water use since they do not account for water conservation beyond that already included in the Uniform Plumbing Code (UPC) and the State of California regulations. Note, based solely on CCWD water supply planning, CCWD would have capacity to supply the City's entire demand without the City's other sources (river diversion, runoff to the municipal reservoir, and use of recycled water). Two key conclusions are drawn from this analysis:

1. The UWMP includes the Aviano area and provided 377 acre feet per year for that area.
2. Based on projections based on more detailed planning presented herein, the proposed project would use 247 acre feet per year, for a net reduction in total demand of 130 acre feet per year. From these values we conclude that the City's overall water planning is adequate for the proposed development.

Assessment of Supply Vulnerability

Water supply and demand reliability comparisons are provided in Table ES-3 for the year 2037, assuming various conditions regarding the future availability of surface supplies and the adoption of water demand management measures. The table considers three water supply scenarios: average/normal water year; single dry-water year; and multiple dry-water years. The possible future reduction in water supply to the City of Antioch due to drought conditions cannot be precisely predicted. However, estimates are made for this WSA. It has been assumed that a single dry-water year would not result in a reduction in normal year supply or demand because the City's available supply is significantly greater than projected demands. The demands and surface water supplies to the City of Antioch water system are assumed to reduce progressively during a multiple-dry-year scenario. For example, during the second year of the multiple-dry-year scenarios, it is assumed that a 10 percent reduction in supply from CCWD would occur in addition to no water from San Joaquin River due to increased salinity levels. At the same time, a 10 percent mandatory/voluntary reduction in demand would also be implemented.

Table ES-3. Water Supply Reliability, 2037, ac-ft/yr

Sustainable Water Supply	Average/normal Water Year (2037)	Single Dry Water Year (2037)[a]	Multiple Dry Water Years				
			Year 1 (2033)[a]	Year 2 (2034)[b]	Year 3 (2035)[c]	Year 4 (2036)[c]	Year 5 (2037)[c]
Surface water	37,600	37,600	37,270	26,600	25,190	25,260	25,330
Groundwater	0	0	0	0	0	0	0
Recycled water	530	530	530	530	530	530	530
Total	38,130	38,130	37,800	27,130	25,720	25,790	25,860
Demand	29,290	29,290	27,450	25,120	24,120	24,510	24,900
Surplus or (Deficit)	8,840	8,840	10,350	2,010	1,600	1,280	960

Notes:

[a] *Assumes no reduction of either demand or supply in single dry water year or first of multiple dry water years because the City's available supply is significantly greater than projected demands.*

[b] *Assumes a 10 percent reduction in water supply from CCWD and no supply from San Joaquin River due to increased salinity level (i.e. surface water) and a 10 percent voluntary/mandatory reduction demand.*

[c] *Assumes a 15 percent reduction in water supply from CCWD and no supply from San Joaquin River due to increased salinity level (i.e. surface water) and a 15 percent voluntary/mandatory reduction demand.*

1. INTRODUCTION

This section discusses the purpose and scope of the water supply assessment (WSA) for the Aviano Adult Community Project (Aviano or Aviano Project) and provides a description of both the proposed development and the existing City of Antioch (City or Antioch) water system.

1.1 Purpose and Scope of Water Supply Assessment

Senate Bill 610, now codified as Water Code sections 10910 and 10911, requires land use planning entities, when evaluating certain large development and reorganization projects, to request an assessment of the availability of water supplies from the water supply entity that will provide water to the project. Such a WSA is performed in conjunction with the land-use approval process associated with the project and must include an evaluation of the sufficiency of the water supplies available to the water supplier to meet existing and anticipated future demands, including the demand associated with the project over a twenty-year horizon for normal, single-dry, and multiple-dry years. This WSA examines a thirty-year projection out of an abundance of caution.

The WSA must identify existing water supply entitlements, water rights, or water service contracts held by the water supplier or relevant to the identified water supply for the proposed project, and include a description of the quantities of water received in prior years by the public water system.

1.2 Description of Proposed Development

Per the Notice of Preparation of a Draft Environmental Impact Report prepared for the Aviano Adult Community Project, the approximately 194-acre project site is located in the largely undeveloped southeastern portion of the City of Antioch, in the East Contra Costa County. Located in Zone III East, the project will draw water from the Antioch water treatment plant (WTP) through the Zone II pumps at the WTP which are designed for overall system demand. The project site is generally rectangular; however the southwestern and southern borders curve inward and are irregularly shaped (see Figure 1-1). The project site currently consists of undeveloped grazing land and has relatively flat terrain; there are no existing structures on the project site. Sand Creek flows in a northeastern direction across the southern portion of the site. The City of Antioch General Plan designates the majority of the northern portion of the site as Low Density Residential. Smaller portions of the site, south of Sand Creek Road, are designated Multiple Family Residential and Public/Quasi Public. The southernmost portion of the site is designated Hillside, Estate and Executive Residential/Open Space. The project site is zoned (S) Study District.

The project proposal is to rezone and develop an active adult community on the approximately 194-acre site with single-family residential units on 73.2 acres, a 4.9-acre recreation facility, 28.9 acres of parks and landscaped areas, a 4.4-acre creek buffer area, 34.8-acres of open space, and associated parking, roadway, and utility improvements.

Specifically, the proposed project would develop 535 adult single-family residential units with an average density of 7.8 units per gross acre. Six different product models would be constructed, ranging from approximately 1,577 to 2,250 square feet in size on lots ranging from approximately 5,000 to 6,000 square feet. All homes would be single-level with a two-car attached garage.

Utilities and public services must accommodate this estimated build-out. Therefore, water supply and service must be analyzed. The City has commissioned this report to assess water service and supply for Aviano Adult Community Project in Antioch, California.

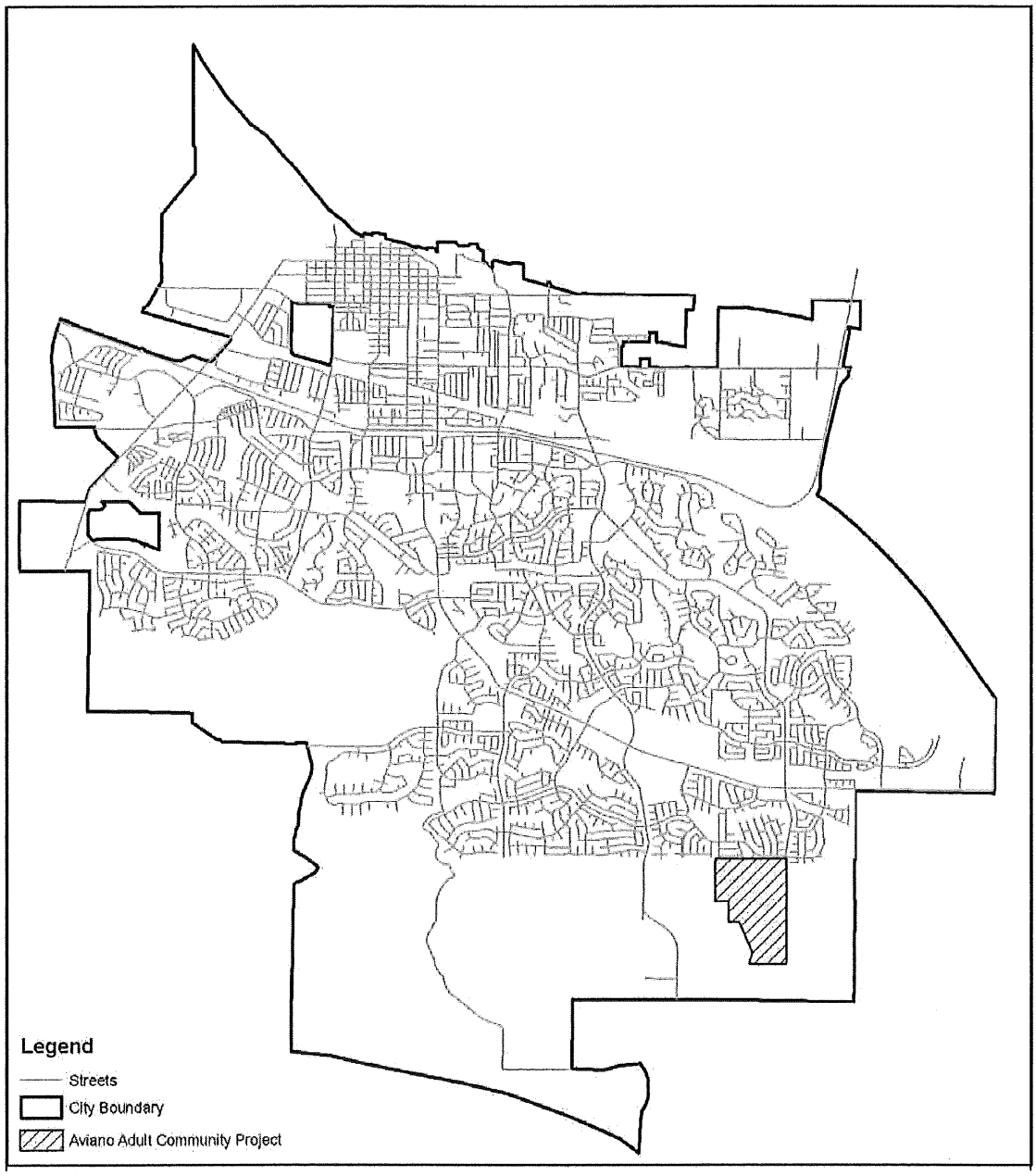


Figure 1-1. Project Location

1.3 Description of Existing City of Antioch Water System and Water Supply Facilities

The Antioch water system serves about 30,825 connections within Contra Costa County. Figure 1-2 shows the service area and its surroundings. The existing service area covers 28.8 square miles and includes the area within the city limits and some adjacent land to the northeast and the west, as shown on Figure 1-2. The service area is primarily residential, with small areas of commercial and industrial land use. Figure 1-3 provides an overview of existing land use planning, based on the current Antioch General Plan and Use Element Map (City of Antioch). In this WSA, it is assumed that marginal agricultural lands in the southern portion of the planning area will be converted to residential or commercial use by the year 2030. Historical and projected population levels are addressed in more detail in Section 3.

The existing water treatment plant (WTP) has a design capacity of 28 mgd. The City is currently expanding the WTP to a capacity of about 38 mgd through a 10-mgd expansion. Construction will be complete in late 2007 or early 2008. In addition to expansion, the City improved water source reliability by purchasing treated water from CCWD (up to 10 mgd) produced at the Randall-Bold Plant (RBP), using a connection to the CCWD multipurpose pipeline at Hillcrest Avenue. The City also retains an emergency connection to the RBP through the Diablo Water District.

Description of Location and Climatology

Antioch has cool and humid winters, and hot and dry summers. Based on the historical data obtained from the Western Regional Climate Center (http://www.wrcc.dri.edu/), Antioch's average monthly temperature ranges from 45 to 74 degrees Fahrenheit (°F), but the reported extreme low and high temperatures have been 18°F and 117°F, respectively. The historical annual average precipitation is approximately 13 inches. The rainy season begins in November and ends in March. Average monthly precipitation during the winter months is about two to three inches, but records show that the monthly precipitation has been as high as nine inches and as low as zero inches. Winter water demands are relatively low. Low humidity usually occurs in the summer months, from May to September. The combination of hot and dry weather during the summer results in high water demands. Landscape irrigation, including lawn watering, in the summer is a major contributor to the higher summer demands.

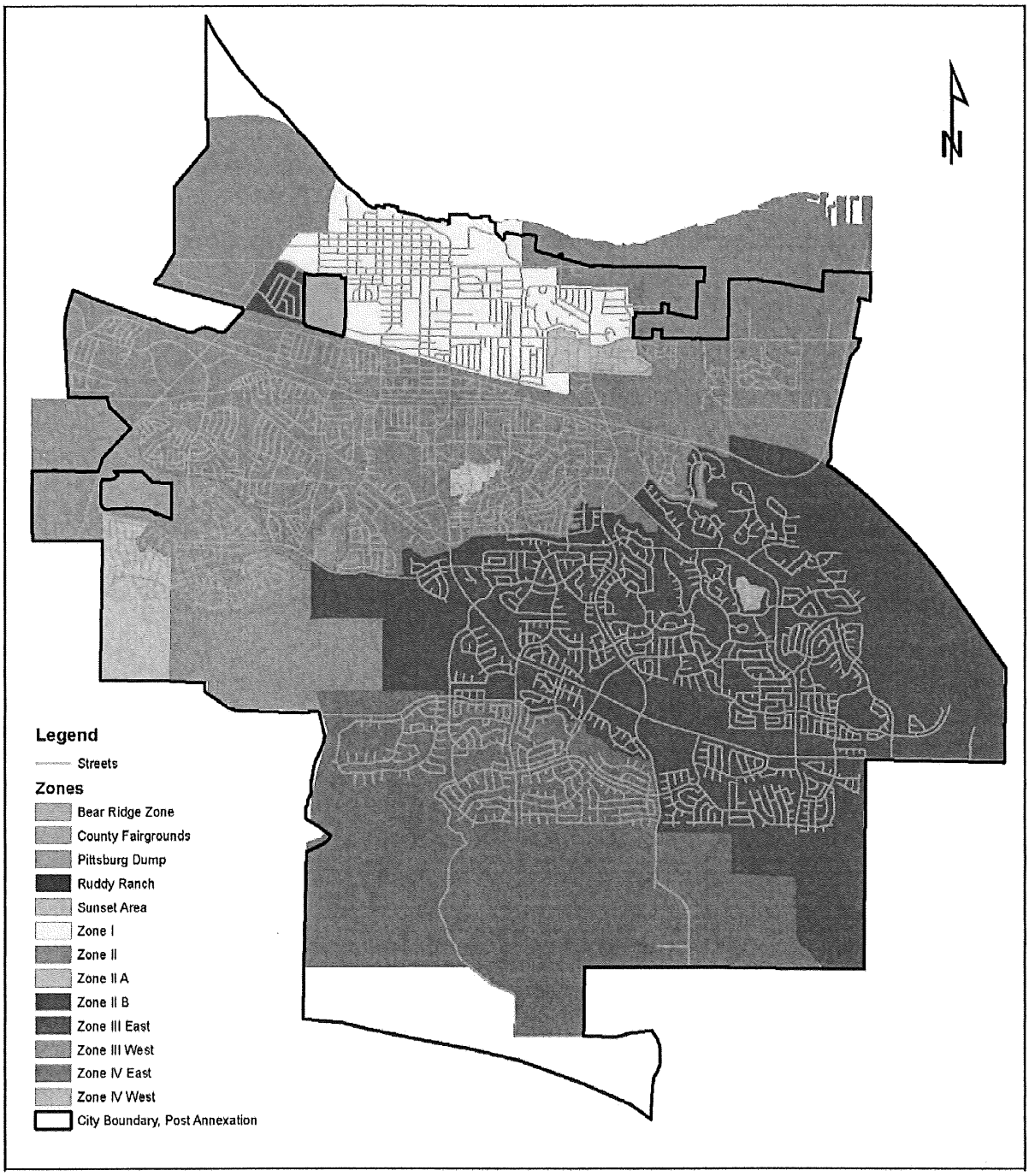


Figure 1-2. Water System Service Area and Pressure Boundaries

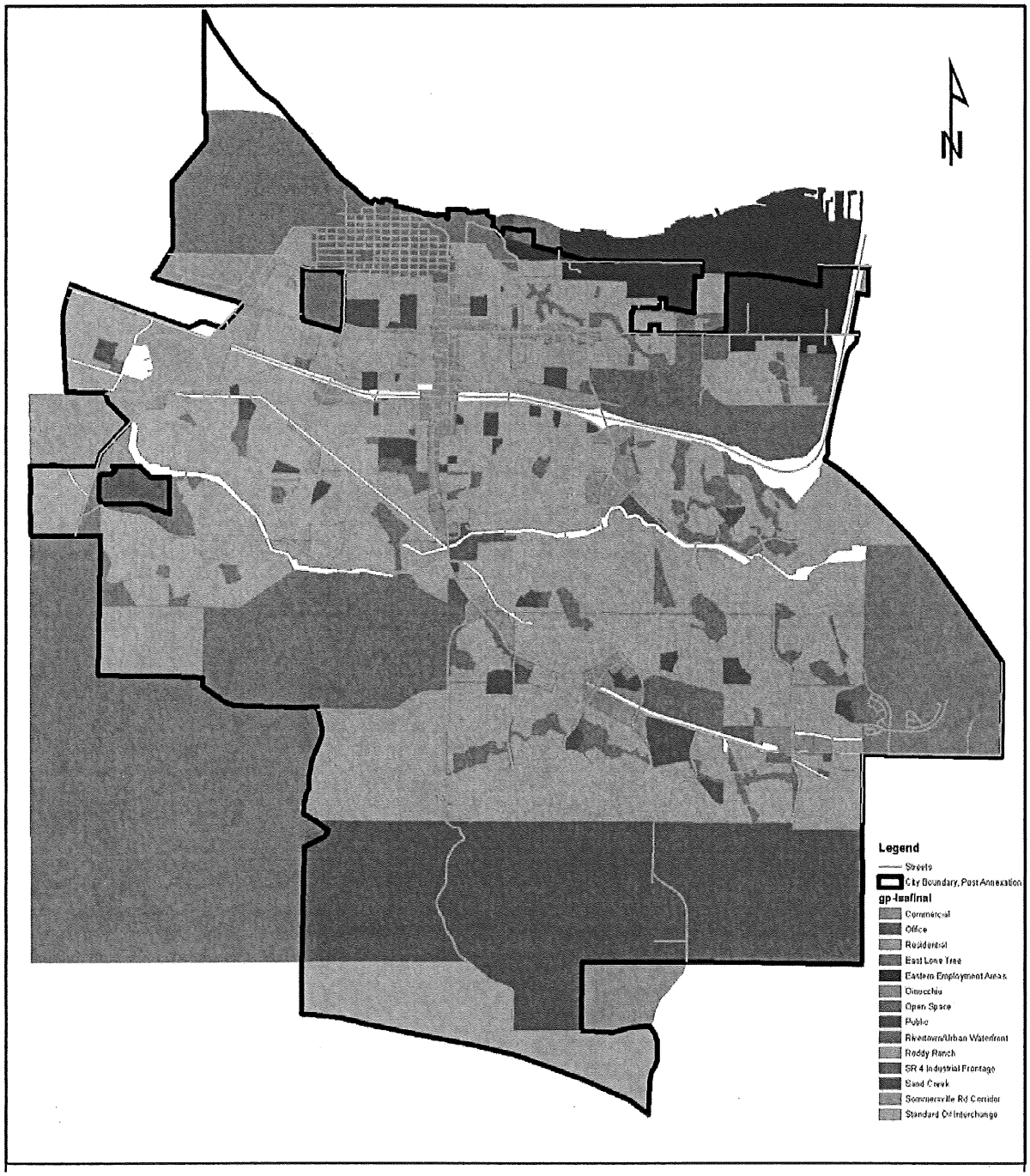


Figure 1-3. General Plan Map

2. WATER SUPPLIES

The City water system currently uses surface water as it sole source of supply. The City brings surface water from three different sources into its water treatment plant. This chapter summarizes the existing and potential surface water supplies. These supplies are described in more detail in the Urban Water Management Plan (UWMP), which is incorporated in this WSA. The UWMP is available for public review at the City of Antioch Public Works Department, Community Development Department, and at the Water Treatment Plant.

2.1 Existing and Future Surface Water Supplies

The City currently has three sources of surface water – San Joaquin River, CCWD, and the Antioch Municipal Reservoir – with recycled water as a future potential source. This section describes these sources.

Table 2-1 summarizes these surface water supplies including water entitlements of each surface water source in units of ac-ft per year.

Table 2-1. Surface Water Sources

Source	Water Entitlements (ac-ft/yr)	Remarks
San Joaquin River	10,200[b]	Pre-1914 City water rights
Contra Costa Water District (CCWD)[a]	23,960 (in 2010) to 30,850 (in 2050)	Contra Costa Canal plus Multi-Purpose Pipeline
Municipal Reservoir	250	
Recycled Water from Delta Diablo Sanitation District	530 (2010 and beyond)	Projections from the Antioch/DDSD Recycled Water Project Facilities Plan, August 2005
Total	35,430 (in 2010) to 42,320 (in 2050)	

Notes:

[a] *Projections from Future Water Supply Study 2002 Update Final Report, Contra Costa Water District.*

[b] *Maximum current pumping capacity. There is currently no limitation other than water quality, as stated in Section 2.1.1.*

2.1.1 San Joaquin River

The City draws from the San Joaquin River whenever salinity is sufficiently low. Based on historical records since 1974 to present, the City has pumped water every year in this time period. The historical annual average is about 172 days pumped per year, with a high of more than 300 days per year in 1995, based on 27 years of historical data. At the maximum available diversion rate – 16 mgd, this is equivalent to about 10,200 ac-ft annually. However, as the salinity increases in the river, on some days the City only pumps part of the day. Furthermore, the City's average daily demand during wet periods when river pumping occurs is less than 16 mgd (i.e., about 10 mgd in January and February 2005). Once the municipal reservoir is full, the City can only divert what it can use. Hence, a typical annual diversion of 7,550 ac-ft is more reasonable on a long-term basis. This water right is a pre-1914 right, with no limitation (other than quality). The City's river diversion

facilities (intake screen, pump, and pipeline) have a maximum capacity of 16 mgd. The City currently has no plans to increase its San Joaquin River diversion capacity.

2.1.2 Contra Costa Water District[1]

The City pumps raw water from the Contra Costa Canal and also purchases some treated water from the CCWD Multi-Purpose Pipeline. CCWD has a contract through the USBR, CVP for up to 195,000 ac-ft per year. CCWD has also developed long-term plans to purchase additional water rights as the demand from its customers exceeds the current CVP contract amount. CCWD also stores up to 100,000 ac-ft in its Los Vaqueros Reservoir. It uses this water for water quality maintenance and as an emergency supply. According to its Future Water Supply Study 2002 Update Final Report (FWSS) based on projected City needs at build out, CCWD has planned for City of Antioch water demands of about 23,960 ac-ft in 2010 and 30,850 ac-ft in 2050. The Preferred Alternative, as outlined in the FWSS, provides drought reliability and operational flexibility in the short-term while maintaining long-term supply targets to meet projected demands. The Preferred Alternative includes such actions as implementation of an expanded District-wide conservation program and the completion of two or more water transfers to meet future demand. Drought years would reduce the available supply as discussed later in Section 4.

2.1.3 Antioch Municipal Reservoir

The 735-acre-foot (240-mg) municipal reservoir provides supply reliability and volume equalization storage for water pumped from the San Joaquin River and the Contra Costa Canal. The reservoir also serves the secondary purposes of flood control and impoundment of local runoff. In an average rainfall year, runoff is about 250 ac-ft. In drought years the runoff decreases substantially.

2.1.4 Recycled Water

The City currently sends its raw sewage to Delta Diablo Sanitation District (DDSD) for treatment and disposal or reuse. The Recycled Water Facility at DDSD has a design capacity of 14,340 ac-ft per year and delivers, on average, 7,200 ac-ft per year of recycled water to destinations within the City of Pittsburg. The City currently receives no recycled water from DDSD. Within the City, the potential demand for recycled water for landscaping and industrial use is 3382 ac-ft per year. The August 2005 Recycled Water Project Facilities Plan recommended a future recycled water project that would supply 530 ac-ft per year within the City with the potential expansion of that system to supply an additional 182 ac-ft per year.

Table 2-2 summarizes the projected annual water supply for normal climate years. No water supply loss due to water quality is anticipated and assumed for water planning purposes.

[1] It should be noted that CCWD entered into an agreement with the East Contra Costa Irrigation District (ECCID) in 2000 to purchase surplus nonpotable irrigation water to be used for M&I purposes in ECCID's service area. This agreement allows CCWD to purchase up to 8,200 af/yr for service in those areas where CCWD's and ECCID's service areas overlap (the "Firm ECCID Water Rights"). The agreement also includes an option for up to 4,000 af/yr of groundwater (by exchanges) when the CVP is in a shortage situation. This exchange water can used anywhere within CCWD's service, including areas beyond ECCID's service area. The Aviano Project is not located within ECCID's service area and this WSA assumes that the CCWD surface supplies available to the City of Antioch do not include the Firm ECCID Water Rights, consistent with the City of Antioch's water service contract with CCWD. It is further noted that the 8,200 af/y of Firm ECCID Water Rights are not needed to serve the Aviano Project or other planned future water uses within the City, as demonstrated in this WSA.

Table 2-2. Projected Normal Water Year Water Supplies, ac-ft/yr						
Water Supply Sources	**2012**	**2017**	**2022**	**2027**	**2032**	**2037**
San Joaquin River	7,550	7,550	7,550	7,550	7,550	7,550
Surface water purchased from CCWD[a]	24,640	26,360	27,750	28,680	29,390	29,800
Municipal Reservoir	250	250	250	250	250	250
Recycled water[b]	530	530	530	530	530	530
Water supply loss due to water quality	0	0	0	0	0	0
Total	32,970	34,690	36,080	37,010	37,720	38,130

Notes:

[a] *Projections from Future Water Supply Study 2002 Update Final Report, Contra Costa Water District. Values were linearly interpolated as necessary between years with actual data.*

[b] *Recycled Water Project Facilities Plan, August 2005.*

2.2 Potential Water Sources

This section examines the potential water sources the City has considered or may consider in the future.

2.2.1 Groundwater

The City currently uses no well water as part of its overall water supply. The City developed some low quality wells during the 1976/1977 drought and used the water for such things as construction but these wells are now off line. Some opportunities for well water development may exist in southeast Antioch but current projects of available supply do not include groundwater resources.

2.2.2 Desalted River Water

Another potential water source during water shortages (droughts) is desalted river water. The City currently has no projects planned to desalt river water but has studied the opportunity on two occasions over the last 30 years. It has not implemented river water desalting owing to capital cost and permitting concerns related to brine (byproduct) disposal. CCWD, along with other agencies (East Bay Municipal Utility District, Santa Clara Valley Water District, and San Francisco Public Utilities Commission) is participating in a Bay-Area-wide study on desalting. This study is examining potential desalting using river water, bay (estuarine) water, or seawater as the source water. The study is in its preliminary stage. One highly ranked alternative would install a desalting facility that would produce up to 71 mgd using membrane technology located near the confluence of the Sacramento and San Joaquin Rivers. Significant further investigation must occur before the lead agencies would commit to a project. Hence, this source now is not considered as an additional supply source.

2.2.3 Transfers and Exchanges

There are no current or future planned agreements for short-term or long-term transfer and exchange within the City's service area.

3. EXISTING AND PROJECTED WATER DEMANDS

This section describes the existing and projected housing and employment figures as well as historical and projected water demand.

3.1 Existing and Projected Demographics

This section describes the existing and projected housing and employment for the existing City of Antioch water system. Population, housing, and employment data from the City of Antioch, the 2000 U.S. Census, and the Association of Bay Area Governments (ABAG) Projections 2002 were used to develop estimates of future Antioch water use. Additionally, we consulted the current Antioch General Plan Land Use Element Map for future development that would impact water use.

3.1.1 City of Antioch System Demographics

Housing and employment data were obtained from the following sources: (1) ABAG Projections 2002: Forecasts for the San Francisco Bay Area and City/County Population, and (2) Housing Estimates, California Department of Finance, January 2005. Historical and projected population, housing and employment data are presented in Table 3-1.

Table 3-1. Housing and Employment Projections, Antioch Water System

Year	Households	Population	Employed Residents
1990[a]	21,729	63,062	30,130
2000[a]	29,656	91,293	43,811
2005[b]	32,560	101,049	47,756
2012[c]	34,115	105,756	53,428
2017[c]	35,862	111,171	57,073
2022[c]	37,608	116,586	60,718
2027[c]	39,355	122,001	64,363
2032[c]	41,102	127,416	68,008
2037[c]	43,897	136,080	73,840

Notes:

Dashed line represents division between historical and projected data.

[a] *Based on ABAG Projections 2002: Forecasts for the San Francisco Bay Area.*

[b] *Population and number of households is based on City/County Population and Housing Estimates, California Department of Finance, Jan 2005. The Department of Finance has not published more recent data. Employed Residents is interpolated based on ABAG Projections 2002.*

[c] *Population and Employed Residents are interpolated based on ABAG Projections 2002. Number of households assumes 3.1 persons per household. No published figures for 2007exist. 2005 represents the most recent published estimated data. 2012 represents the first 5-year increment for this WSA.*

3.1.2 Proposed Project Demographics

Housing and land use data developed in the *Notice of Preparation of a Draft Environmental Impact Report, Aviano Adult Community Project* and the Conceptual Land Use/Circulation Plan (dated June 22, 2007) were used to develop estimates for this study of the future Project water use. Complete build out of this development is anticipated by 2012.

3.2 Historical Water Use and Demands

Records of historical water production serve as the basis for developing unit water demands for the Antioch Water System. Water production is the volume of water measured as it leaves the Antioch WTP, which includes water delivered to residential, commercial, and public authority connections, as well as unaccounted-for water.

3.2.1 Annual Water Production

The historical data included average daily water production and total average annual water production. Historical water production from 1975 to 2006 is shown in Table 3-2. Currently some water loss occurs between the points of Antioch's water diversion (the San Joaquin River and the Contra Costa Canal) and flow leaving the WTP. These losses include evaporation losses from the municipal reservoir and water used at the Lone Tree Golf Course for irrigation. Average daily use has gradually increased after the severe drought of 1976 to 1977 with a dip in the early 1990s corresponding to a second drought. There was a slight decrease in 1998, probably in response to the heavy El Niño rainfall as well as minor decreases in 2005 and 2006 likely owing to higher than average rainfall and late, wetter spring weather.

Please see the following page for Table 3-2.

Table 3-2. Historical Water Use		
Year	Annual Average (ac-ft/yr)	Average Daily (mgd)
1975	7,695	6.87
1976	6,698	5.98
1977	3,439	3.07
1978	5,522	4.93
1979	6,362	5.68
1980	6,564	5.86
1981	8,098	7.23
1982	7,437	6.64
1983	7,818	6.98
1984	8,961	8.00
1985	9,442	8.43
1986	10,137	9.05
1987	11,033	9.85
1988	11,145	9.95
1989	11,335	10.12
1990	12,993	11.60
1991	10,439	9.32
1992	12,041	10.75
1993	12,970	11.58
1994	14,348	12.81
1995	14,483	12.93
1996	15,983	14.27
1997	16,924	15.11
1998	15,278	13.64
1999	17,249	15.40
2000	19,327	17.21
2001	20,044	17.89
2002	20,906	18.66
2003	20,686	18.46
2004	21,576	19.21
2005	19,945	17.80
2006	19,717	17.60

Source:
City of Antioch Water Production (treated water).

3.2.2 Unaccounted-for Water

Unaccounted-for water is the difference between the actual volume of water treated and the actual metered consumption. Such apparent losses are always present in a water system due to pipe leaks, unauthorized connections or use; faulty meters; unmetered services such as fire protection and training, and system and hydrant flushing. Table 3-3 summarizes the unaccounted-for water from 2000 to 2004 as the difference between the annual production and annual sales. The average unaccounted-for water comprised 2.7 percent of the total water produced. This percentage is very low compared to other California utilities. This lower percentage may be partly due to the addition of meters to parks, medians, and school sites, regular meter maintenance, stringent construction standards applied to new facilities, replacement of deteriorated older pipes, and the relatively large portion of the system served by more modern facilities. The City's maintenance staff also actively pursues and corrects leaks. The low loss rate may, however, be due in part to a discrepancy between production data and meter readings.

Table 3-3. Historical Unaccounted-for Water

Year	Water Production[a] (ac-ft/yr)	Water Sales (ac-ft/yr)	Unaccounted-for Water (ac-ft/yr)	Unaccounted-for Water, Percent of Annual Water Production
2000	19,327	17,901	1,426	7.4
2001	20,044	19,698	346	1.7
2002	20,906	20,244	662	3.2
2003	20,686	20,153	533	2.6
2004[b]	21,576	21,837	-261	-1.2
Average 2000 to 2004	20,508	19,967	541	2.7

Notes:

[a] *Water production (treated water).*

[b] *Raw water sent to Lone Tree Golf Course, included in water sales data but not in water production data, will contribute to erroneous (negative) data.*

3.2.3 Unit Water Use

Unit water use factors were developed to estimate future water needs based on housing projections discussed previously. Future residential water needs are determined using the projections for single-family and multi-family dwelling units within the City, coupled with a unit water use factor per dwelling unit type. The unit water use factors are established by comparing historical data for numbers of single-family and multi-family residential units to total water production for the years 2000, 2001, 2002, 2003, and 2004. These years were used to establish the unit water use factors because these are the years for which historical housing data are available (DOF, 2000-2004). However, according to Table 3-2, water use diminished in 2005 and 2006, while single-family and multi-family residential unit counts have increased over this period by 420 and 1 units, respectively. Thus, omitting 2005 and 2006 data will yield conservatively higher unit water use factors for single-family and multi-family residential units. The current water consumption per dwelling unit is estimated at 454 gallons per single-family dwelling unit per day and 252 gallons per multi-family dwelling unit per day.

A separate unit water use factor on a per capita basis was developed to estimate future overall City-wide water needs. This factor is derived by comparing historical data for total water production (including unaccounted-for water) and historical population for the years 2000, 2001, 2002, 2003, and 2004. The water use factor takes the total amount of water production (i.e., the water demand) for any one year for all use types or sectors and divides this amount by the population. In other words, the demand from all use sectors is allocated among the City's population on a per capita basis. Thus, this per capita unit water use factor absorbs

all use types or sectors, including but not limited to residential, commercial, manufacturing, open space, and agricultural, and assumes that the relative proportions of these use types or sectors (i.e., the *percentage* of the water demand allocated to each member of the City's populace that is attributable to each use sector) will not change significantly within the planning period. The water consumption is estimated at 190 gallons per person per day City-wide, including unaccounted for water and 186 gallons per person per day, not including unaccounted for water. These factors do not take into account future water conservation within the City. The unit water use factors currently used for the City of Antioch water system are shown in Table 3-4. These per capita unit use factors apply City-wide.

Table 3-4. City of Antioch Water System Unit Water Use Factors

Classification	Unit Water Use Factor	
	gpd/household[a]	ac-ft/yr/household
Single-family residential	454	0.5090
Multi-family residential	252	0.2820
Population	190 [b,c]	0.2129 [b,d]
	186 [c,e]	0.2082 [d,e]

Notes:

[a] *Gallons per day/household.*
[b] *Includes unaccounted for water and water losses between diversion and flow leaving the WTP.*
[c] *Gallons per person per day.*
[d] *Acre-feet per person per year.*
[e] *Does not include unaccounted for water and water losses between diversion and flow leaving the WTP.*

3.2.4 Proposed Project Unit Water Use

The unit water use factors used to estimate project demands are presented in Appendix A rather than as a table in the main body of the WSA due to its complexity. Because of the project-specific nature of many end use categories, this WSA employs a refined unit water use analysis by compositing the unit water use of each individual component that comprise each end use category. This WSA cited unit water use factors published in several sources, including the Handbook of Water Use and Conservation (Vickers, 2001). Note that the unit water use is based on senior occupancy.

3.3 Projected Water Demands

This section describes the projected water demands for the Antioch system. In addition, this section describes the projected water demands for the proposed development.

3.3.1 City of Antioch Water System Projected Water Demands

System-wide water demands through the year 2036 were estimated based on the Antioch water system unit water use factors (see Table 3-4) and the population projections (see Table 3-1). These projections are shown in Table 3-5. As discussed previously, the projection is assumed to capture all use types or sectors, including residential, commercial, manufacturing, open space, and agricultural. By 2036, water demands are expected to increase by 35 percent, from about 19.2 mgd (21,837 ac-ft/yr) in 2004 to 25.9 mgd (28,971 ac-ft/yr) in 2037. Impacts to water use due to conservation measures taken in the future are not reflected in the projected water demands. In summary, from 1994 to 2004, Antioch system water demands increased by approximately 50 percent, with a growth rate of approximately 5 percent per year. The projected water demand growth rate between 2012 and 2037 is 29 percent or approximately 0.8 percent per year, which is less than what has

occurred historically. The decrease reflects much slower growth within the City as a result of City planning policies as well as a slow down in economic forces which drive development.

Table 3-5. City of Antioch System Total Projected Water Demands

	Annual Average	
Year	ac-ft/yr	mgd
2005	19,950	17.8
2006	19,720	17.6
2012	22,520	20.1
2017	23,670	21.1
2022	24,820	22.2
2027	25,970	23.2
2032	27,130	24.2
2037	29,430	26.3

3.3.2 Proposed Projected Water Demands for the Project

Project-related water demands through the year 2037 were estimated based on the project-specific unit water use factors developed in Section 3.2.4 (see Appendix A) and the demographic estimates for the development project. Based on the Notice of Preparation of a Draft Environmental Impact Report prepared for the Aviano Adult Community Project, Brown and Caldwell, working with City staff, has developed projected water use for the City with and without the Aviano Adult Community Project. Projected water demands for the Aviano project site, based on previous land use designations provided in the City of Antioch Urban Water Management Plan, are calculated and presented for comparison as well. Table 3-6 shows the projected water demands from the proposed project by user type. The projected annual water demands are based on the assumption that build out will occur by 2012. Table 3-7 presents projected City water demands, with and without the Aviano Adult Community Project.

These projections represent an upper limit for water use since they do not account for water conservation beyond that already included in the Uniform Plumbing Code and the State of California regulations. Note, based solely on CCWD water supply planning, CCWD would have capacity to supply the City's entire demand without the City's other sources (river diversion, runoff to the municipal reservoir, and use of recycled water). Two key conclusions are drawn from this analysis:

1. The UWMP includes the Aviano area and provided 377 acre feet per year for that area.
2. Based on projections based on more detailed planning presented herein, the proposed project would use 247 acre feet per year, for a net reduction in total demand of 130 acre feet per year. From these values we conclude that the City's overall water planning is adequate for the proposed development.

Table 3-6. Proposed Development Projected Annual Water Demands by End Use

End Use	Daily Water Demand (gpd)	Annual Water Demand (gal/yr)	Annual Water Demand (acre-ft/yr)
Single-Family Residences	132,130	48,229,020	148.0
Recreational Facility	800	290,620	1.0
Parks & Landscaping	77,400	28,251,250	87.0
Water Quality Features	0	0	0.0
Open Space	1,920	702,420	2.0
Total	**212,260**	**77,473,308**	**240**

Note:

Demands for Single-Family Residences above include between 2.5 to 2.8 acre-feet per acre-year of yard irrigation (about 2/3 of total residential demand). Installation of water-efficient landscaping water may reduce residential water demands by half or 2/3.

Table 3-7. Estimate of City Water Requirements Without and With the Aviano Adult Community Project

	Annual Water Demand, ac-ft					
Year	Aviano Project (per this WSA)	Aviano Project (per UWMP)	City Without Aviano Project (per this WSA)	City Without Aviano Project (per UWMP)	New City-Wide Total (based on this WSA)	Original City-Wide Combined Total (per UWMP)
2012	240	380	22,280	22,140	22,380	22,520
2017	240	380	23,430	23,290	23,530	23,670
2022	240	380	24,580	24,440	24,680	24,820
2027	240	380	25,730	25,590	25,830	25,970
2032	240	380	26,890	26,750	26,990	27,130
2037	240	380	29,190	29,050	29,290	29,430

4. SUPPLY/DEMAND COMPARISON, SHORTAGE, AND SUPPLY PROJECTS

This chapter provides a comparison of projected water supplies and demand and water shortage expectations.

4.1 Water Supplies and Demand Comparison

The projected annual existing available water supply and demand from the proposed project for the City of Antioch water system is compared and summarized in Table 4-1. Recycled water supply is not currently available, but is assumed to become available by 2011. However, the recycled water project is subject to funding (and therefore may not be available). Groundwater is not available. As shown in Table 4-1, the surface water supplies are sufficient to serve existing, approved, and pending development.

Table 4-1. Comparison of Existing Supply and Projected City of Antioch Demand, Including Proposed Project, ac-ft/yr

Water supply sources	2012	2017	2022	2027	2032	2037
San Joaquin River	7,550	7,550	7,550	7,550	7,550	7,550
Surface water purchased from CCWD	24,640	26,360	27,750	28,680	29,390	29,800
Municipal Reservoir	250	250	250	250	250	250
Recycled water	530	530	530	530	530	530
Water supply loss due to water quality	0	0	0	0	0	0
Total Supply	32,970	34,690	36,080	37,010	37,720	38,130
Total Demand	22,380	23,530	24,680	25,830	26,990	29,290
Surplus or (Deficit)	10,590	11,160	11,400	11,180	10,730	8,840

Water supply and demand reliability comparisons are provided in Tables 4-2 and 4-3 for years 2027 and 2037, respectively. These comparisons consider three water supply scenarios: average/normal water year; single, dry-water year; and multiple dry-water years. The possible future reduction in water supply to the City of Antioch water system due to drought conditions cannot be precisely predicted. However, estimates are made for this WSA. It is assumed that a single dry-water year would not result in a reduction in normal year supply or demand. The demands and surface water supplies to the City of Antioch water system are assumed to be progressively reduced during a multiple-dry-year scenario. For example, during the second year of the multiple-dry-year scenarios, it is assumed that a 10 percent reduction in supply from CCWD would occur in addition to no water from San Joaquin River due to increased salinity levels. At the same time, a 10 percent mandatory/voluntary reduction in demand would also be implemented. The footnotes in Table 4-2 and 4-3 describe in detail the supply reduction assumptions for each water supply source for each drought year in a given scenario.

Table 4-2. Water Supply Reliability, 2027, ac-ft/yr

Sustainable Water Supply	Average/Normal Water Year (2027)	Single Dry Water Year (2027)[a]	Multiple Dry Water Years				
			Year 1 (2023)[a]	Year 2 (2024)[b]	Year 3 (2025)[c]	Year 4 (2026)[c]	Year 5 (2027)[c]
Surface water	36,500	36,500	35,740	25,310	24,060	24,220	24,370
Groundwater	0	0	0	0	0	0	0
Recycled water	530	530	530	530	530	530	530
Total	37,030	37,030	36,760	25,840	24,590	24,750	24,900
Demand	25,830	25,830	24,910	22,630	21,570	21,760	21,960
Surplus or (Deficit)	11,200	11,200	11,850	3,210	3,020	2,990	2,940

Notes:

[a] *Assumes no reduction of either demand or supply in single dry water year or first of multiple dry water years because the City's available supply is significantly greater than projected demands.*

[b] *Assumes a 10 percent reduction in water supply from CCWD and no supply from San Joaquin River due to increased salinity level (i.e. surface water) and a 10 percent voluntary/mandatory reduction demand.*

[c] *Assumes a 15 percent reduction in water supply from CCWD and no supply from San Joaquin River due to increased salinity level (i.e. surface water) and a 15 percent voluntary/mandatory reduction demand.*

Table 4-3. Water Supply Reliability, 2037, ac-ft/yr

Sustainable Water Supply	Average/Normal Water Year (2037)	Single Dry Water Year (2037)[a]	Multiple Dry Water Years				
			Year 1 (2033)[a]	Year 2 (2034)[b]	Year 3 (2035)[c]	Year 4 (2036)[c]	Year 5 (2037)[c]
Surface water	37,600	37,600	37,270	26,600	25,190	25,260	25,330
Groundwater	0	0	0	0	0	0	0
Recycled water	530	530	530	530	530	530	530
Total	38,130	38,130	37,800	27,130	25,720	25,790	25,860
Demand	29,290	29,290	27,450	25,120	24,120	24,510	24,900
Surplus or (Deficit)	8,840	8,840	10,350	2,010	1,600	1,280	960

Notes:

[a] *Assumes no reduction of either demand or supply in single dry water year or first of multiple dry water years because the City's available supply is significantly greater than projected demands.*

[b] *Assumes a 10 percent reduction in water supply from CCWD and no supply from San Joaquin River due to increased salinity level (i.e. surface water) and a 10 percent voluntary/mandatory reduction demand.*

[c] *Assumes a 15 percent reduction in water supply from CCWD and no supply from San Joaquin River due to increased salinity level (i.e. surface water) and a 15 percent voluntary/mandatory reduction demand.*

4.2 Water Shortage Expectations

No unusual short-term water shortages are anticipated. Short-term surface water supply shortages lasting from several hours to several days are accounted for in supply planning. At key locations, the City's pumps are fitted with standby diesel-powered generators for use during power outages, which increases the reliability of supply. The City's Water Shortage Contingency Plan is included in the 2006 City of Antioch Urban Water Management Plan (Brown and Caldwell, 2006).

5. CONCLUSIONS

This WSA has been prepared in accordance with the requirements of Senate Bill 610, now Water Code Sections 10910 and 10911. The total available supply for the Antioch Water System in 2037 in a normal climate year is 38,616 ac-ft per year (ac-ft/yr). The total projected demand from existing and projected development (including this proposed Project) is 29,303 ac-ft/yr. Thus, it has been determined that, during normal climate years, adequate water supplies are available, during a 30-year projection, to serve the projected demand of the proposed Project, in addition to existing and planned future uses. Furthermore, water supply and demand reliability analyses show that even during multiple dry-water years, adequate water supplies are anticipated to be available.

6. LIMITATIONS

Report Limitations

This document was prepared solely for the City of Antioch in accordance with professional standards at the time the services were performed and in accordance with the contract between the City of Antioch and Brown and Caldwell dated June 11, 2007. This document is governed by the specific scope of work authorized by the City of Antioch; it is not intended to be relied upon by other party except for regulatory authorities contemplated by the scope of work. We have relied on information or instructions provided by the City of Antioch and other parties and, unless otherwise expressly indicated, have made no independent investigation as to the validity, completeness, or accuracy of such information.

APPENDIX A

Acronyms

ABAG	Association of Bay Area Governments
ac-ft/yr	acre-feet per year
CCWD	Contra Costa Water District
CVP	Central Valley Project
DDSD	Delta Diablo Sanitation District
ECCID	East Contra Costa Irrigation District
FWSS	Future Water Supply Study
mgd	million gallons per day
RBP	Randall-Bold Plant
UPC	Universal Plumbing Code
USBR	United States Bureau of Reclamation
UWMP	Urban Water Management Plan
WSA	water supply assessment
WTP	water treatment plant
yr	year

APPENDIX B

Sample Project Calculations

Summary Demand (BC Evaluation)

End Use	Daily Water Demand (gpd)	Annual Water Demand (gal/yr)	Annual Water Demand (acre-ft/yr)
Single-Family Residences	132,134	48,229,020	148.0
Recreational Facility	796	290,624	0.9
Parks & Landscaping	77,401	28,251,245	86.7
Water Quality Features	0	0	0.0
Open Space	1,924	702,419	2.2
TOTAL	**212,256**	**77,473,308**	**238**

Summary Demand (Previous [UWMP] Evaluation)

End Use	Area (ft^2)	Area (acres)	Housing Density (homes/acre)	Number of Homes	Annual Water Demand Factor (acre-ft/yr/household)	Annual Water Demand (acre-ft/yr)
Single-Family Residences	5,597,887	128.5	4	514	0.5090	261.6
Multi-Family Residential	771,207	17.7	20	354	0.2820	99.9
Estate	860,031	19.7	1.5	30	0.5090	15.1
TOTAL	**7,229,125**	**166.0**				**377**

Single Family Residential Water Demand

Floor Plan	Planned No. of Homes	Feature	No. of Features	Water Demand per Fixture (gal/day/household)	Subtotal Water Demand (gal/day)	Subtotal Water Demand (gal/yr)	Assumptions	Reference
Plans 1 through 3	268	Toilets	2	14.28	3,827	1,396,870	1.6 gal/flush toilets	Vickers, Amy, 2001. Handbook of water use and conservation: homes, landscapes, businesses, industries, farms. (Page 25)
		Faucets	4	23.6	6,325	2,308,552	2.5 gpm faucet	Vickers, Amy, 2001. Handbook of water use and conservation: homes, landscapes, businesses, industries, farms. (Page 103 - Adjusted value for 1.75 persons per occupied household.)
		Showerheads	2	15.4	4,127	1,506,428	2.5 gpm showerhead	Vickers, Amy, 2001. Handbook of water use and conservation: homes, landscapes, businesses, industries, farms. (Page 88 - Adjusted value for 1.75 persons per occupied household.)
		Clothes Washers	1	17.5	4,690	1,711,850	2.7 gpl clothes washer	Vickers, Amy, 2001. Handbook of water use and conservation: homes, landscapes, businesses, industries, farms. (Page 118 - Adjusted value for 1.75 persons per occupied household.)
		Dishwashers	1	1.2	322	117,384	7.0 gpl dishwasher	Vickers, Amy, 2001. Handbook of water use and conservation: homes, landscapes, businesses, industries, farms. (Page 128 - Adjusted value for 1.75 persons per occupied household.)
		Irrigation/landscape (ft^2)	3050	175	46,900	17,118,500	100 gal/capita/day	Vickers, Amy, 2001. Handbook of water use and conservation: homes, landscapes, businesses, industries, farms. (Page 142 - Based on estimate of 100 gal/capita/day for outdoor use in San Diego, CA.)
Plans 4 through 6	267	Toilets	2	14.28	3,813	1,391,657	1.6 gal/flush toilets	Vickers, Amy, 2001. Handbook of water use and conservation: homes, landscapes, businesses, industries, farms. (Page 25)
		Faucets	4 to 6	23.6	6,301	2,299,938	2.5 gpm faucet	Vickers, Amy, 2001. Handbook of water use and conservation: homes, landscapes, businesses, industries, farms. (Page 103 - Adjusted value for 1.75 persons per occupied household.)
		Showerheads	2	15.4	4,112	1,500,807	2.5 gpm showerhead	Vickers, Amy, 2001. Handbook of water use and conservation: homes, landscapes, businesses, industries, farms. (Page 88 - Adjusted value for 1.75 persons per occupied household.)
		Clothes Washers	1	17.5	4,673	1,705,463	2.7 gpl clothes washer	Vickers, Amy, 2001. Handbook of water use and conservation: homes, landscapes, businesses, industries, farms. (Page 118 - Adjusted value for 1.75 persons per occupied household.)
		Dishwashers	1	1.2	320	116,946	7.0 gpl dishwasher	Vickers, Amy, 2001. Handbook of water use and conservation: homes, landscapes, businesses, industries, farms. (Page 128 - Adjusted value for 1.75 persons per occupied household.)
		Irrigation/landscape (ft^2)	3340	175	46,725	17,054,625	100 gal/capita/day	Vickers, Amy, 2001. Handbook of water use and conservation: homes, landscapes, businesses, industries, farms. (Page 142 - Based on estimate of 100 gal/capita/day for outdoor use in San Diego, CA.)
TOTAL					**132,134**	**48,229,020**		

General Assumptions:
(1) The occupancy per household is 1.75.
(2) Each person flushes the toilet 5.1 times per day.
(3) Landscape is water-efficient, California-native - rather than turf.

Edgewood Recreation Center Water Demand

Feature/Fixture	No.	Units for No. of Feature	Unit Demand	Subtotal Water Demand (gal/day)	Subtotal Water Demand (gal/yr)	Assumptions	Reference
Swimming Pool and Spa (Hot tub)	2100	ft^2	6 AF/acre-yr	258	94,254		Professional judgement
Toilets	200	persons	1.6 gpd/person	320	116,800	1.6 gpf toilets, 1 flush/person/day	Vickers, Amy, 2001. Handbook of water use and conservation: homes, landscapes, businesses, industries, farms. (Page 27 - Adjusted value for 1.0 flush/person/day because rec center, not office.)
Urinals	100	males	1.0 gpd/male	100	36,500	1.0 gpf urinal, 1 flush/male/day	Vickers, Amy, 2001. Handbook of water use and conservation: homes, landscapes, businesses, industries, farms. (Page 77 - Adjusted value for 1.0 flush/person/day because rec center, not office.)
Faucets (restroom)	4	fixtures	23.6 gal/faucet/day	94	34,456	2.5 gpm faucet, each faucet used as much as residential use	Vickers, Amy, 2001. Handbook of water use and conservation: homes, landscapes, businesses, industries, farms. (Page 103 - Assumed rec center use per faucet is equal to .)
Faucets (kitchen)	1	fixtures	23.6 gal/faucet/day	24	8,614	2.5 gpm faucet, each faucet used as much as residential use	
TOTAL				**796**	**290,624**		

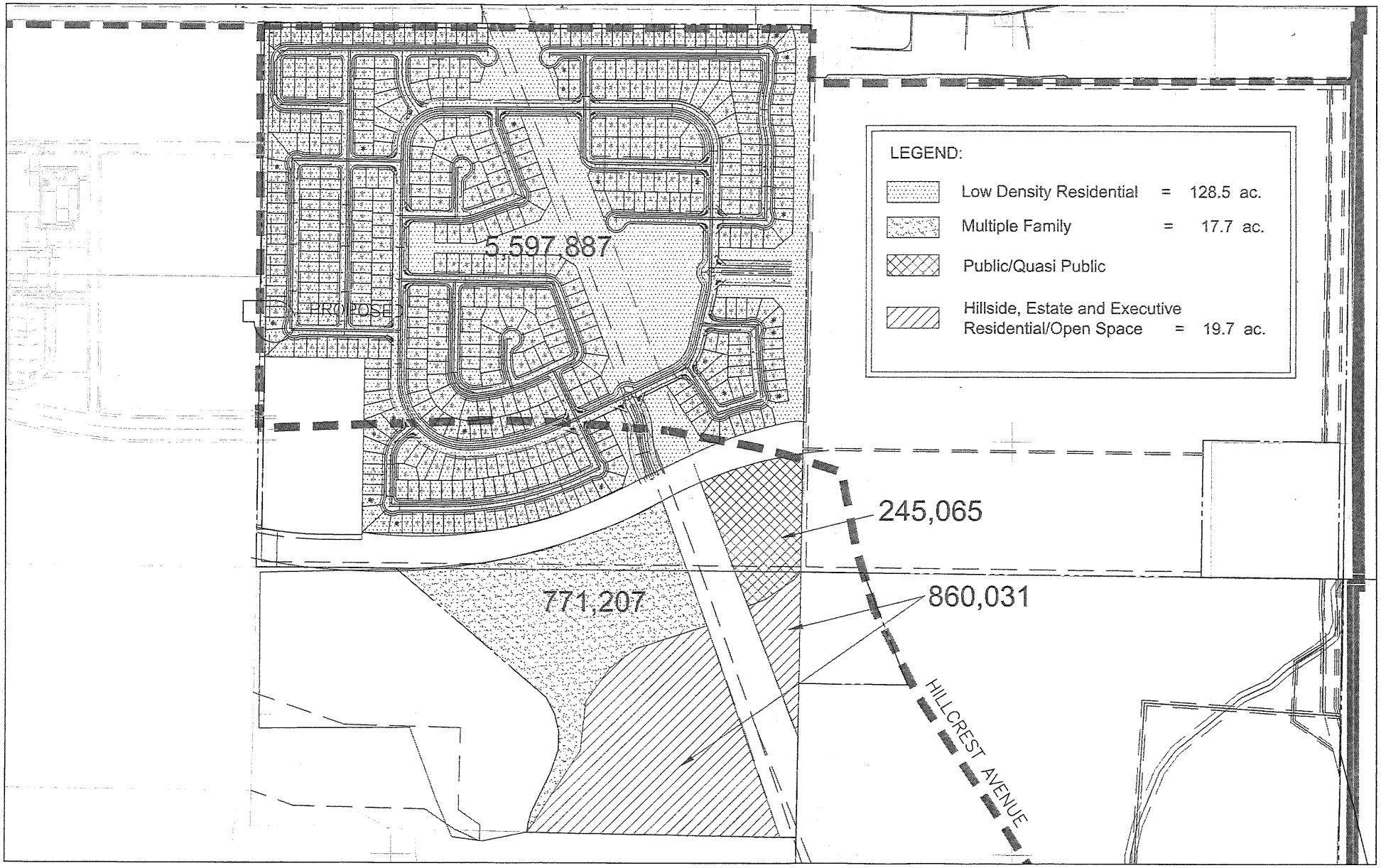
Parks & Landscaping Water Demand

Parameter	Value	Source
Total Area (acres)	28.9	Notice of Preparation
Total Area (ft^2)	1258884	
Percentage of Area to be Irrigated	90%	Engineering judgement
Demand Factor (acre-ft/acre-yr)*	3.0	
Daily Demand (gpd)	77,401	
Annual Demand (gal/yr)	28,251,245	
Annual Demand (acre-ft/yr)	86.7	

* Demand factor based on engineering judgement for lack of better data. Irrigation demands of existing City parks and landscaping were unavailable due to unresponsiveness of City of Antioch Department of Finance staff.

Open Space Water Demand

Feature	No.	Unit Demand	Daily Demand (gpd)	Annual Demand (gal/year)	Source
Water feature	7500 ft^2	5 AF/acre-yr	769	280,519	Professional judgement
Pool and spa (outdoor)	9400 ft^3	6 AF/acre-yr	1,156	421,900	Professional judgement
TOTAL			**1,924**	**702,419**	


LEGEND:
Low Density Residential = 128.5 ac.
Multiple Family = 17.7 ac.
Public/Quasi Public
Hillside, Estate and Executive Residential/Open Space = 19.7 ac.
5,597,887
PROPOSED
245,065
771,207
860,031
HILLCREST AVENUE

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