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## FINAL MITIGATED NEGATIVE DECLARATION

Prepared for  
The City of Antioch

# Northeast Antioch Area Reorganization

Prepared by



135 Main Street, Suite 1600  
San Francisco, CA 94105

April 2010

## INTRODUCTION

On March 17, 2010, the City of Antioch published a Draft Initial Study and Mitigated Negative Declaration (IS/MND) which analyzed potential impacts of the proposed annexation of three subareas totaling approximately 678 acres into both the City as well as the Delta Diablo Sanitation District. A 20-day public review and comment period commenced, and was extended to conclude on April 19, 2010. During the public comment period, two public agencies provided a comment letter: the Local Agency Formation Commission (LAFCO) and the Delta Diablo Sanitation District (DDSD). These comment letters are included in **Appendix E** along with specific responses to the issues raised.

This Final MND includes edits, corrections, and items of clarification made in response to comments received on the Draft IS/MND. In this Final MND, new text is shown in **bold-underline** and deleted text is shown in ~~strikeout~~.

This Final MND includes the following four revisions:

- Page 10: The word “County” is deleted from Contra Costa Local Agency Formation Commission
- Page 54: The word “County” is deleted from Contra Costa Local Agency Formation Commission
- Page 54: Clarifying text is added to define future sewage flow routing, i.e., “**Portions of the reorganization area would have sewage flow routed through the DDSD Antioch Pump Station, as shown in Figure 7.**”
- Figure 7 is revised to correctly depict the proposed sewage flow routing.



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# Northeast Antioch Area Reorganization Project

## Mitigated Negative Declaration

### Project Description

1. *Project Title:* Northeast Antioch Area Reorganization
2. *Lead Agency Name and Address:* City of Antioch, Community Development Department, Planning Division, 3rd and H Streets, P.O. Box 5007, Antioch, CA 94531
3. *Contact Person and Phone Number:* Victor Carniglia, Deputy Director of Community Development, (925) 779-7036
4. *Project Location and Existing Land Uses*

Three areas in Contra Costa County are being considered for reorganization (annexation or incorporation) into the City of Antioch (City) and the Delta Diablo Sanitation District (DDSD). The three areas (referred to in this study as Areas 1, 2a, and 2b) are located generally along the San Joaquin River and in the vicinity of Wilbur Avenue. **Figure 1** shows the project location within the region as well as the three subareas.

**Area 1** is an approximately 481 acre area predominantly occupied by heavy industrial uses. Area 1 is generally located south of the San Joaquin River, west of State Route 160 and north of the Burlington Northern Santa Fe (BNSF) railroad.

**Area 2a** is a 94 acre area located between Area 1 and the Antioch Bridge (State Route 160). Area 2a is currently occupied by predominantly marina and storage uses.

**Area 2b** is about 103 acres in area south of Wilbur Avenue and roughly centered on Viera Avenue. Area 2b contains 120 existing residential uses, nearly all of which obtain water from individual domestic wells and dispose of wastewater in individual domestic septic systems. The area also includes limited commercial and industrial areas, but is predominantly residential.

5. *Surrounding Land Uses*

As shown in **Figure 1**, the northern edges of Areas 1 and 2a are bounded by the San Joaquin River. Lands south of Area 1 but west of Area 2b are all within the City of Antioch and are currently developed with a mix of industrial/commercial and residential uses.

Lands south of Area 1 and east of Area 2b are also in the City of Antioch and currently include agricultural, institutional, and commercial uses between the BNSF railroad to the

north and East 18<sup>th</sup> Street to the south.

Lands east of Area 2a are in the City of Oakley and are currently in recreational and aquatic related uses.

6. *Project Sponsor's Name and Address:*

City of Antioch  
Community Development Department  
PO Box 5007  
Antioch, CA 94531-5007

7. *Contra Costa County General Plan Designations:*

The County land use designations are shown in detail on **Figure 2**.

*Area 1:* Heavy Industrial (HI) and Open Space (OS).

*Area 2a:* Heavy Industrial (HI) and Delta Recreation and Resources (DR).

*Area 2b:* Several designations, including Heavy Industrial (HI), Light Industrial (LI), Open Space (OS), Parks and Recreation (PR), Public and Semi-Public (PS), Single-Family Residential High-Density (SH), and Single-Family Residential Medium-Density (SM).

8. *Contra Costa County Zoning Designations:*

The County zoning designations are shown in detail on **Figure 3**.

*Area 1:* Heavy Industrial

*Area 2a:* Heavy Industrial

*Area 2b:* Several designations, including: R-10 Single Family Residential, D-1 Two-Family Residential, A-2 General Agriculture, R-40 Single Family Residential, C-M Controlled Manufacturing, LI Light Industrial

9. *City of Antioch General Plan Designations:*

Areas 1, 2a, and 2b are within the City of Antioch's sphere of influence and as such, have been assigned land use designations in the City of Antioch General Plan. These designations are shown in detail on **Figure 4**. As the lands are currently within the jurisdiction of Contra Costa County, the City's assignment of General Plan designations are to be considered *advisory*.

*Area 1:* Eastern Waterfront Employment Area; designations include General Industrial, Rail-Served Industrial, and Open Space.

*Area 2a:* Eastern Waterfront Employment Area: designations include

Marina/Support Uses and Commercial.

*Area 2b:* Medium Low Density Residential; Medium Density Residential; Open Space; Business Park.

*10. Description of Project:*

The project under CEQA review involves a number of City actions that would lead to the reorganization (annexation) of the three subareas into both the City as well as the DDS. The term “reorganization” is preferred over “annexation” insofar as a “reorganization” means two or more changes of organization initiated in a single proposal. It can include two or more changes to the same agency, or to more than one agency. In contrast, an “annexation” refers to a boundary change involving only one agency or jurisdiction. In this case, the proposed project would expand the current boundaries of both the City and the DDS, hence the use of the term “reorganization.”

**Background:** The three subareas have been within the City’s sphere of influence for over 30 years. The City’s 2003 General Plan shows these areas generally within the “Eastern Waterfront Employment Focus Area.” Starting in 2005, the City began a concerted effort to reorganize portions of this Focus Area. A 2005 Strategic Plan examined background issues related to the possible reorganization of Areas 1, 2a, and 2b into the City and the DDS and is included as **Appendix B**. In July 2007, the City formally initiated reorganization efforts, leading to preparation of an application to LAFCO and a draft Negative Declaration covering only Area 1. While the City adopted the Negative Declaration in March 2008, the reorganization application did not move forward with LAFCO, due largely to the need for a tax transfer agreement between the City and the County.

The City is now considering the reorganization of Area 1 along with Areas 2a and 2b in an effort to improve public services and utilities in all three areas. The actual annexation (reorganization) of these areas may be undertaken as separate LAFCO application processes, but this environmental document examines the potential effects of the possible reorganization of all three areas, and evaluates the connection and provision of municipal services and utilities (potable water, storm drain, emergency services, sewer service, and street lighting), with the latter utilities and service examinations being programmatic in nature. As a condition of approval of a reorganization application, LAFCO will require all service providers to document an intent to serve the subject properties. The provision of City services, including police services, would be extended to the project area upon reorganization; the provision of municipal infrastructure such as water and wastewater

connections may be limited and would be phased in over a longer period of time, based primarily on funding. The priority would be given to the infrastructure most critical to health and safety, such as sewer and water services.

Mirant Marsh Landing, LLC (Mirant) is pursuing the development of a new power plant that would be located on a portion of Area 1. In accordance with state laws as specified in the Warren-Alquist Act, California Public Resources Code section 25500, et seq., Mirant has independently initiated a separate permit and environmental review process with the California Energy Commission (CEC). The California Legislature established the CEC in 1975 as part of a comprehensive program to site new power plants across the state. The Legislature gave the CEC exclusive and pre-emptive approval and licensing authority for thermal energy plants producing energy equal to or greater than 50 megawatts (MW). Mirant's proposed plant for Area 1 would produce up to 760 MW of electricity. Although the CEC has pre-emptive authority over local laws, the CEC will typically ensure that projects achieve compliance with local laws, ordinances, regulations, standards, plans, and policies. The CEC's environmental review process is a certified regulatory program under CEQA; the CEC's process yields substantially similar analysis as would the CEQA process. The CEC process differs in that CEC staff will produce several environmental and decision documents instead of an Environmental Impact Report (EIR). Mirant initiated the approval and licensing process with the CEC by submitting an application and supplemental materials. The CEC is reviewing Mirant's application materials and is expected to make a determination in the case in 2010.

**Proposed Actions:** The project involves the City undertaking actions consistent with LAFCO reorganization requirements and Government Code Section 56668 et seq, including pre-zoning and provision of municipal infrastructure, as described below.

**A. General Plan Amendment:** The project includes an amendment to the General Plan text:

- **Text Amendment:** The proposed reorganization would result in a potential conflict with two General Plan policies related to the future provision of a trail along the San Joaquin River.

Policy "I" in Section 4.4.6.3 of the General Plan Land Use Element states:

*As a condition of new development or redevelopment of properties along the San Joaquin River between Rodgers Point and the existing marina at the SR 160 freeway, require dedication and improvement of a riverfront trail and linear park.*

In addition, policy “c” of Section 10.3.2 of the Resource Management Element states:

*Maintain the shoreline of the San Joaquin River as an integrated system of natural (wetlands) and recreation (trails and viewpoints) open space as set forth in the Land Use Element and Public Services and Facilities Element.*

Should the CEC approve the proposed Mirant power plant, the implementation of the public access requirements in policy “I” and policy “c” above may be inconsistent with this industrial use. The project therefore includes a proposed amendment to the Land Use Element that would allow the City Council to modify the riverfront public access requirement if fulfilling the requirement would result in substantial risks to public health and/or safety.

The City thus proposes that the following additional language (shown in underlined text) be added to Policy 4.4.6.3.1:

*As a condition of new development or redevelopment of properties along the San Joaquin River between Rodgers Point and the existing marina at the SR 160 freeway, require dedication and improvement of a riverfront trail and linear park. If the land uses proposed along the San Joaquin River Waterfront are incompatible with a riverfront trail and linear park based upon safety, security, or other reasons as determined by the City Council, the trail may instead be located along existing public roadways near any such property in question. The dimensions of this trail along with necessary landscaping, irrigation and other streetscape improvements shall be determined by the City.*

In addition, the City proposes the following additional language (shown in underlined text) to be added to policy “c” of Section 10.3.2 of the Resource Management Element:

*Maintain the shoreline of the San Joaquin River as an integrated system of natural (wetlands) and recreational (trails and viewpoints) open space as set forth in the Land Use Element and Public Services and Facilities Element except where the City Council finds that land uses along the waterfront are incompatible with a riverfront trail and/or viewpoints based upon safety, security, or related reasons. The dimensions of any such trail along with necessary landscaping, irrigation and other streetscape improvements shall be determined by the City.*

**B. Pre-zoning:** The project includes pre-zoning the land to be reorganized into the City and DDS, consistent with LAFCO requirements. **Figure 5** shows the City’s proposed pre-zoning designations. In addition to applying City zoning designations to the three areas, the City also proposes, as part of the project, minor modifications to various zoning regulations. These modifications are fully discussed below.

**Area 1:** The majority of Area 1 (with the exception of the Antioch Dunes National

Wildlife Refuge (ADNWR)) is proposed to be zoned “M-2 Heavy Industrial District.” This proposed designation is consistent with the existing County zoning designation of “Heavy Industrial”.

**Area 2a:** The City proposes two zoning designations for this area. Lands from the San Joaquin River, approximately 1,200 linear feet south towards Wilbur Avenue would have a WF Urban Waterfront District designation. North of Wilbur Avenue, to the WF Waterfront area, the City proposes C-3 Service Commercial District zoning. This proposed designation represents a change from the existing County zoning designation of “Heavy Industrial”.

**Area 2b:** The City recognizes that many properties in this area are inconsistent with its current residential zoning requirements. The City thus proposes to pre-zone this area as Study Zoning District (S). The City would maintain the County’s existing zoning regulations for this area, including land use, density, and height, until such time in the future that the City considers different land use designations for this area.

As part of the project, the City proposes a number of modifications to the M-2 zoning regulations that would apply to M-2 zoned lands Citywide. These changes are:

- A new section (**Section 9-5.3835 Power Plants**) would be added to the Antioch Municipal Code to provide further information regarding power plants and the California Energy Commission’s review, approval, and oversight practices. The proposed new Section 9-5.3835 Power Plants will state “Thermal power plants over 50 Megawatts are subject to the review and authority of the California Energy Commission as specified in the Warren-Alquist Act, California Public Resources Code section 25500, et seq. All Power Plants will have to adhere to the City’s Laws, Ordinances, Regulations, and Standards.<sup>1</sup> Projects subject to the California Energy Commission’s exclusive licensing authority shall also adhere to such Laws, Ordinances, Regulations, and Standards as determined to be applicable by the California Energy Commission.”

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<sup>1</sup> California Public Resources Code §25523 requires the CEC to make a determination whether a particular facility conforms to local regulatory requirements. To the extent there is not compliance with a local regulation, the CEC is required to meet with the local jurisdiction in an effort to correct or eliminate the non-compliance. However, if the non-compliance cannot be avoided, the CEC can nevertheless approve the facility if it can make certain findings regarding its public necessity. Thus, the City’s proposed use permit requirement on thermal power plants producing 50 MW or greater could be overridden by the CEC.

- Section 9-5.3803 – Table of Land Use Regulations of the Antioch Municipal Code summarizes permitted and conditionally permitted uses in all zoning districts citywide. The City proposes to modify this section by adding “Power Plants under 50 MW” and “Power Plants over 50 MW”, under Industrial Uses with reference to the proposed new Section, 9-5.3835 Power Plants. Both Power Plants under and over 50 MW that are not subject to the California Energy Commission’s exclusive licensing authority will require a Use Permit (UP) in the M-2 zoning designation. This section would also be modified to state that any other type of power generating facility would require “U” Use Permit approval.
- Height limit: Section 9-5.601 of the Antioch Municipal Code governs height limits in zoning districts citywide. This section’s limits regarding the M-2 district would be modified. The current M-2 height limit of 70 feet would not be applicable to exhaust stacks and similar industrial equipment associated with a Power Plant under or over 50 MW in capacity.
- Section 9-5.1001 of the Antioch Municipal Code sets forth landscaping requirements citywide. The City proposes to modify the landscape requirements concerning M-2 zoned areas (Section 9-5.1001 to 9-5.1005) and Parking Lot Landscaping (Section 9-1716) to be applicable only to areas of the site that are located within the required landscape setback from a public road right of way as specified in Section 9-5.601 and areas that are accessible by the public such as parking lots.
- The Antioch Dunes National Refuge is proposed to be zoned “OS” Open Space/Public Use District.

**C. Providing municipal utilities and public services to the reorganized area.** Both LAFCO and the Government Code stipulate that annexations or reorganizations should be completed in order to better and more efficiently provide services. In the present case, the three subareas are almost entirely surrounded by incorporated cities (Antioch and Oakley). As such, the provision of public services (such as police protection) to these areas would be more efficiently achieved by local agencies versus County agencies.

In addition, the three areas are known to have substantial utility deficiencies. For instance, several streets in Area 2b are unpaved. Moreover, residences in Areas 2a and 2b rely on well water for drinking and also utilize individual septic systems within close proximity, thus posing risk of cross-contamination and attendant public health and safety concerns. Reorganization into DDSA would allow for municipal waste water service to



replace individual septic systems. Reorganization into the City would allow for the provision of treated water.

**Figure 6** shows existing water, sewer, and storm drain utilities in the project area. As part of the reorganization process, the City has conducted a study of the infrastructure improvements needed to bring Areas 1, 2a, and 2b up to City standards. Illustrations from this study are described below and are included as **Figures 7** through **10**. **Figure 7** shows the water, sewer, and storm drain improvements necessary within the project area to bring the subject properties up to City infrastructure standards. **Figure 8** shows needed electrical utility improvements to bring the subject properties up to City standards. **Figure 9** shows proposed street improvements needed to meet current City standards. Finally, **Figure 10** shows needed right-of-way acquisitions in order to provide the utility and street improvements.

Concurrent with the infrastructure study, the City also prepared a fiscal impact analysis, studying the cost of the proposed infrastructure improvements relative to anticipated tax revenues associated with the subject properties. The summary of this study is included as **Appendix C**, and concludes that while anticipated tax revenues for Areas 1, 2a, and 2b would cover the ongoing cost of providing City services, such as public safety, substantial additional investment would be required to make the necessary improvements and service extensions.

This environmental document examines the full extent of all proposed infrastructure improvements for Areas 1, 2a, and 2b. The improvements shown on Figures 7 through 10 should be considered diagrammatic. As funding is available to implement various infrastructure improvements, the City, prior to construction, will develop more detailed drawings depicting the proposed improvements. At such time that more detailed drawings are developed, the City will determine if any additional CEQA review is required.

If reorganized into the City, the reorganization area is ultimately anticipated to receive municipal water service from the City of Antioch. This initial study examines the potential impacts of this proposed change, including a review of the adequacy of available municipal water to serve the project area.

In addition, following reorganization, the project area would receive other municipal services from the City similar to any other area of the City. Such services include policing and maintenance services. The project's potential environmental impacts



related to these municipal services are addressed in this initial study.

#### **D. Additional Actions**

**Tax Transfer Agreement** - The City and Contra Costa County are in the process of negotiating a tax transfer agreement. The agreement will stipulate how future revenues will be shared between the two jurisdictions. This agreement has no physical impact and is not subject to CEQA. It is identified here as part of the possible agency actions related to the annexation project.

**Out of Agency Service Agreement** – If necessary, the city may seek approval from LAFCO for an Out of Agency Service Agreement (agreement), which would allow the City to provide services to the Mirant Marsh Landing Generating Station for a specific period of time while the annexation process is completed. If needed, the agreement would allow the city to provide the same services on a temporary basis that are contemplated by the proposed annexation. This environmental document would therefore also support the agreement, should it be deemed necessary. The agreement is identified here as part of the possible agency actions related to the annexation project.

#### *10. Requested Actions:*

**Table 1** lists the discretionary and ministerial approvals requested for the proposed project.

**Table 1. Project Approvals**

<b>Agency/Provider</b>	<b>Permit/Approval</b>
City of Antioch	Adoption of Negative Declaration Approval of Pre-Zoning(s)
Delta Diablo Sanitation District	Provision of “Intent to Serve” Statement(s)
City of Antioch and Contra Costa County	Tax Transfer Agreement(s)
Contra Costa County Local Agency Formation Commission	Approval of Reorganization(s) Out of Agency Service Agreement

Source: CirclePoint, 2010.

## Environmental Factors Potentially Affected

The environmental factors checked below would be potentially affected by the project, involving at least one impact that is a “Potentially Significant Impact” as indicated by the checklist on the following pages. Mitigation measures have been provided for each potential significant impact, reducing all to a less than significant level.

- |   |  |
|---|--|
| <input type="checkbox"/> Aesthetics                         | <input type="checkbox"/> Agricultural Resources      |
| <input type="checkbox"/> Air Quality                        | <input type="checkbox"/> Biological Resources        |
| <input type="checkbox"/> Cultural Resources                 | <input type="checkbox"/> Geology & Soils             |
| <input type="checkbox"/> Hazards & Hazardous Materials      | <input type="checkbox"/> Hydrology & Water Quality   |
| <input type="checkbox"/> Land Use & Planning                | <input type="checkbox"/> Mineral Resources           |
| <input type="checkbox"/> Noise                              | <input type="checkbox"/> Population & Housing        |
| <input type="checkbox"/> Public Services                    | <input type="checkbox"/> Recreation                  |
| <input type="checkbox"/> Transportation & Circulation       | <input type="checkbox"/> Utilities & Service Systems |
| <input type="checkbox"/> Mandatory Findings of Significance |  |

## Compliance with New CEQA Guidelines

This environmental impact checklist incorporates proposed text changes to the CEQA guidelines to address the analysis of greenhouse gas emissions. The new CEQA guidelines also require a discussion of forest resources and incorporate modifications to the significance criteria for transportation and circulation impacts.

In regards to greenhouse gas emissions, Senate Bill 97, passed in 2008, directed the Office of Planning and Research (OPR) to prepare, develop, and transmit to the Resources Agency by July 1, 2009, guidelines for the feasible mitigation of GHG emissions or their effects. OPR issued draft guidelines on April 13, 2009. The CEQA guidelines were approved by OPR in December 2009 and will formally take effect on March 18, 2010.

This mitigated negative declaration (MND) is being published before March 18, 2010, and is not therefore legally required to address these new CEQA checklist questions. However, this MND does include analysis in compliance with the proposed new guidelines and changes to Appendix G of the CEQA Guidelines in **Appendix A**. **Appendix A** includes the new checklist questions and analysis related to Agricultural and Forest Resources and Transportation and Circulation, as well as the quantified evaluation of greenhouse gas emissions per the new Greenhouse Gas Emission environmental checklist.

## Determination

On the basis of this initial evaluation:

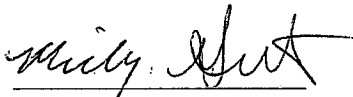
I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared. ☐

I find that the proposed project COULD have a significant effect on the environment, but mitigations identified in this Initial Study will reduce these impacts to a less than significant level, and a MITIGATED NEGATIVE DECLARATION will be prepared. ☒

I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required. ☐

I find that the proposed project MAY have a significant effect(s) on the environment, but at least one effect has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets, if the effect is a "potentially significant impact" or "potentially significant unless mitigated." An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed. ☐

I find that although the proposed project could have a significant effect on the environment, there WILL NOT be a significant effect in this case because all potentially significant effects (a) have been analyzed adequately in an earlier EIR pursuant to applicable standards and (b) have been avoided or mitigated pursuant to that earlier EIR, including revisions or mitigation measures that are imposed upon the proposed project. ☐



Mindy Gentry  
Associate Planner

4/28/10  
Date

# ENVIRONMENTAL IMPACT CHECKLIST

## I. Aesthetics

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Substantially damage scenic resources, including but not limited to: trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### a) Have a substantial adverse effect on a scenic vista?

**No Impact.** The City's General Plan identifies views of Mt. Diablo, ridgelines, and the San Joaquin River as important visual resources. There are existing intermittent views of Mt. Diablo and the San Joaquin River from various locations in the project area. As neither development nor construction would immediately result from project implementation, the project would do nothing to alter existing limited views of these scenic resources. The reorganization of the project area into the City and the DDSA would result in no change to any view of Mt. Diablo or the San Joaquin River.

The existing County zoning for all of Area 1 and 2a is Heavy Industrial (Figure 3). The County's Heavy Industrial zone district does not include *any* height limit for development<sup>2</sup>. The City is proposing to reduce the acreage of land zoned for Heavy Industrial uses, and would also limit the height of industrial development on that land to 70 feet, with the

<sup>2</sup> Contra Costa County Zoning Code, Section 84-62.602 Lot, height, yard – Regulations – “There are no lot area, height, or side yard regulations or limitations in the H-I district.” (Heavy Industrial).

exception of exhaust stacks and similar industrial equipment associated with a Power Plant. The city's M-2 zone district imposes requirements related to lot coverage and minimum building site that would further restrict the density and massing of future development. The project would therefore reduce potential obstruction of views by restricting the height, location, and density of future industrial development.

All city lands currently zoned M-2 are located adjacent to or in close proximity to the project area<sup>3</sup>; thus the proposed height exception in the M-2 zone district for exhaust stacks and similar industrial equipment associated with a Power Plant would be limited to the project area and the immediate vicinity. The project would not adversely affect scenic vistas from other locations within the city. No mitigation is required.

**b) Substantially damage scenic resources, including but not limited to: trees, rock outcroppings, and historic buildings within a state scenic highway?**

**No Impact.** According to the California Department of Transportation (Caltrans), there are no state or county designated scenic highways in the City nor in eastern Contra Costa County as a whole. Moreover, there are no rock outcroppings or historic buildings in the vicinity of the project site. Therefore, the project would result in no impact to scenic resources within a state scenic highway. No mitigation is required.

**c) Substantially degrade the existing visual character or quality of the site and its surroundings?**

**Less Than Significant Impact.** The project involves a series of procedural actions and would not introduce any new construction or development that would degrade the existing visual character or quality of the site or its surroundings.

In terms of potential changes associated with future development, Area 1 and 2a would change from all heavy industrial zoning under County designations, to a mixture of heavy industrial, open space, urban waterfront, and service commercial uses. The City's intention for Area 2b is to identify zoning that most closely matches the existing pattern of development. The visual character and quality of the site would therefore be similar to or less industrial than what is already envisioned by the County's zoning and general plan land use designations. Over time, as City standards are implemented, it is reasonable to assume that streetscape improvements would improve the area's existing visual character and quality, particularly such portions of the project area that lack paved roads and/or streetlights. No mitigation is required.

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<sup>3</sup> Lands between McElheny Road and Fulton Shipyard Road, approximately 1/8 mile west of the western boundary of Area 1, also have an M-2 zoning designation.

**d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?**

***No Impact.*** As discussed above, implementation of the proposed project would allow for street improvements, including new street lighting per City standards. The timing, locations, and extent of such lighting improvements are not known at this time. At such time that the City has the resources to move forward with such improvements, separate environmental review would be required to document any environmental impacts. Any future new development in the project area would be required to comply with City of Antioch lighting standards as articulated in Section 9-5.1715 of the Antioch Municipal Code. The project would result in no light or glare impact. No mitigation is required.

## II. Agricultural Resources

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland) to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with existing zoning for agricultural use, or with a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Involve other changes in the existing environment which due to their location or nature, could individually or cumulatively result in loss of Farmland to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

### a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland) to non-agricultural use?

**No Impact.** The California Department of Conservation maintains the Farmland Mapping and Monitoring Program (FMMP) which produces maps and other data showing California's agricultural resources. The FMMP maps show Prime Farmland, Unique Farmland, and Farmland of Statewide Importance, based on ratings that take into account soil quality and irrigation status, using the U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS) soil survey data.

Under CEQA, conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance is considered a significant impact.

The project site contains approximately 28.6 acres of Farmland of Statewide Importance, as shown in Figure 11.<sup>4</sup> Of the total 28.6 acres of Farmland of Statewide Importance, about 21.5 acres are within Area 1 and 7.1 acres are within Area 2b. As of October 2009, all of

<sup>4</sup> California Department of Conservation. (June 2009). Contra Costa County Important Farmland 2008. <<ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/2008/con08.pdf>>.

these lands are in agricultural use. (The project site also contains approximately 26.2 acres of Farmland of Local Importance, which is not considered a protected category of agricultural lands under CEQA.)

Implementation of the project will not change the existing agricultural uses on site. Section 5-3809 of the Antioch Municipal Code allows for pre-existing agricultural uses to be continued when a new land use designation is imposed, and all of the lands currently in agricultural use would remain in agricultural production following the reorganization. As the project would not include any change to existing land uses on the ground, the project would not result in the conversion of Farmland of Statewide Importance to non-agricultural uses. Any future construction or development in Areas 1 and 2b would be subject to separate environmental review where any potential changes to designated Farmlands would be analyzed. Therefore, the project would not convert and designated Farmland to a non-agricultural use. No mitigation is required.

#### Additional consideration of agricultural lands pursuant to LAFCO regulations

LAFCO defines prime agricultural land in the California Government Code as *land that has not been developed for a use other than an agricultural use* and that meets any of the following qualifications (*emphasis added*):

- a) Land that qualifies, if irrigated, for rating as class I or class II in the USDA NRCS land use capability classification, whether or not land is actually irrigated, provided that irrigation is feasible;
- b) Land that qualifies for rating 80 through 100 Storie Index Rating;
- c) Land that supports livestock used for the production of food and fiber and that has an annual carrying capacity equivalent to at least one animal unit per acre as defined by the USDA;
- d) Land planted with fruit or nut-bearing trees, vines, bushes, or crops that have a nonbearing period of less than five years and that will return during the commercial bearing period on an annual basis from the production of unprocessed agricultural plant production not less than four hundred dollars (\$400) per acre.
- e) Land that has returned from the production of unprocessed agricultural plant products an annual gross value of not less than four hundred dollars (\$400) per acre for three of the previous five calendar years.

Under LAFCO regulations, the 28.6 acres of Farmland of Statewide Importance would be considered “Prime.” In addition, the project site also contains approximately 26.2 acres of Farmland of Local Importance, which is not considered a protected category of agricultural



lands under CEQA, but some or all of which LAFCO may consider “Prime” pursuant to the LAFCO regulations discussed above.

No other lands within the three areas appear to meet LAFCO definitions of prime farmland insofar as all other lands have been developed for uses other than agricultural use.

In terms of future development and possible conversion of agricultural uses, any development in Areas 1 and 2b would be subject to environmental review where any potential changes to designated Farmlands would be analyzed.

Regarding Area 1, the reorganization does not increase the likelihood of conversion of agricultural lands as the County’s General Plan and zoning already identifies the lands in Area 1 for Heavy Industrial development. The City’s proposed Industrial designations would be consistent with the existing General Plan and zoning classifications.

Regarding Area 2b, the reorganization does not increase the likelihood of conversion of agricultural lands as the County’s General Plan already identifies the lands for public space and open space, not agricultural use. The City of Antioch is proposing a General Plan designation of open space for these lands, which is consistent with the existing County land use designations. [The existing County zoning for this acreage is single family residential (R-10) and controlled manufacturing (C-M)].

Furthermore, the proposed annexation would not result in any change to the existing land uses. As discussed above, all of the lands currently in agricultural use would remain in agricultural production following the reorganization. As the project would not include any change to existing land uses on the ground, the project would not result in the conversion of Farmland of Statewide Importance or Farmland of Local Importance to non-agricultural uses.

**b) Conflict with existing zoning for agricultural use, or with a Williamson Act contract?**

***No Impact.*** No portion of the project site is under a Williamson Act contract. However, approximately 16.4 acres of Area 2b is currently zoned for agricultural uses (H-1) by Contra Costa County. Implementation of the proposed project would pre-zone Area 2b under the City of Antioch’s S Study Zoning District. This designation would allow the City to maintain the County’s existing zoning regulations for this area, including land use, density, and height, until such time in the future that the City considers different land use designations for this area. Therefore, the project would result in no conflict with either a Williamson Act contract or existing zoning for an agricultural use. No mitigation is required.

**c) Involve other changes in the existing environment which due to their location or nature, could individually or cumulatively result in loss of Farmland to non-agricultural use?**

***Less Than Significant Impact.*** The project site contains approximately 28.6 acres of Farmland of Statewide Importance in Areas 1 and 2b. Implementation of the proposed project would result in these areas receiving City of Antioch General Plan and zoning designations and would also allow for the extension of City services (potable water, storm drain, sewer service, and street lighting) to the existing residences and businesses currently located on the project site. As noted above, the project would not result in any change of an existing land use on the ground; moreover, Antioch Municipal Code Section 5-3809 allows for the continuation of existing agricultural uses on a site when that site's zoning designation may be changed. The extension of urban services throughout the project area may result in an increased likelihood that existing agricultural lands in the project area are under greater pressure from market forces to convert to a non-agricultural use. However, the timing and extent of actual infrastructure improvements in the project area is not known. Therefore, consideration of possible future conversions of Farmland would be speculative. As noted above, the reorganization does not increase the likelihood of conversion of agricultural lands in Area 1, as the County's General Plan already identifies the lands in Area 1 for Heavy Industrial development. Regarding Area 2b, both the County General Plan and the City's proposed General Plan designations indicate open space or public space for the majority of these lands. In summary, the project would result in a less than significant impact in terms of other environmental changes that could affect Farmland.

### III. Air Quality

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a) Conflict with or obstruct implementation of the applicable Air Quality Attainment Plan or Congestion Management Plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

#### a), b), c), and d) Impacts related to emissions/air quality standards/criteria pollutants?

**No Impact.** A project would be judged to conflict with or obstruct implementation of the regional air quality plan if it would be inconsistent with the regional growth assumptions, in terms of population, employment, or regional growth in Vehicle Miles Traveled (VMT). The proposed project would not result in population growth or result in any emissions since the project is comprised of procedural actions and would not result in any new development that could have an air quality impact. Any future construction or development in Areas 1, 2a, and 2b, including the new power plant, would be subject to a separate environmental review process in which any potential air quality impacts associated with the specific land use

would be identified. Therefore, the project would not conflict with or prevent attainment of the applicable Air Quality Attainment Plan, violate any air quality standards, or substantially increase criteria pollutant concentrations, and no impact related to emissions would occur. No mitigation is required.

**e) Create objectionable odors affecting a substantial number of people?**

***Less Than Significant Impact.*** Implementation of the proposed project would allow for existing residences on the project site to connect to City sewer services over time, as funds are available to develop necessary trunk lines, and lateral connections are installed. Over a long-term time frame, this would be a beneficial improvement that could reduce odors in the project area resulting from any existing malfunctioning septic systems. Additionally, future construction or development in Areas 1, 2a, and 2b would be subject to separate environmental review to consider potential odor impacts. Therefore, the proposed project would result in a less than significant impact in creating objectionable odors. No mitigation is required.

#### IV. Biological Resources

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
<hr/>				
Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as candidate, sensitive, or special status species in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Have a substantial adverse impact on federally protected wetlands as defined by Section 404 of the Clean Water Act (including but not limited to: marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with an established resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Conservation Community Plan, or other approved local, Regional, or state habitat Conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<hr/>				

**a), b), c) Impacts to habitat, natural community, sensitive or special-status species, or migratory species?**

**No Impact.** The Antioch Dunes National Wildlife Refuge is located within Area 1 of the project site and is considered an important natural community. No change in ownership, management, surrounding land uses, or control of the project site would result from implementing the proposed reorganization, and therefore there would be no impact on habitat, natural community, sensitive or special-status species, or migratory species that may or may not exist on the project site. Any future construction or development in Areas 1, 2a, or 2b would be subject to separate environmental review to identify any potential impacts to potential biological resources. No mitigation is required.

**d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with an established resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?**

**No Impact.** The project involves a series of procedural actions and would not introduce any new construction or development that would alter existing conditions.

Furthermore, the project area is surrounded by industrial and otherwise developed uses to the south and west, which preclude major wildlife movement. While some agriculture and undeveloped lands occur to in the project area and to the southeast of Areas 1 and 2b, this land is bordered by heavily traveled thoroughfares. The BNSF railroad bisects Area 1 and Area 2b, State Route 4 is less than 1 mile south of the project site, and State Route 160 borders Area 2a to the east. Existing wildlife movement opportunities are therefore heavily constrained under existing conditions.

The San Joaquin River is located immediately to the north of Area 1 and 2a and does provide an important movement corridor for fish. As noted above, the project would not result in any physical impact to this resource. The potential construction of a new power plant is not part of this project and would be subject to separate environmental review that would evaluate potential impacts to the San Joaquin River. No mitigation is required.

**e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?**

**No Impact.** The project site may contain biological resources that are protected by ordinance at the City or County levels, such as protected trees. However, the proposed project consists of a series of procedural actions and does not include any construction or development activities. Any future construction or development in Areas 1, 2a, and 2b would be subject to separate environmental review to identify any potential impacts to potential biological resources protected by City or County ordinances. No mitigation is required.

**f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Conservation Community Plan, or other approved local, Regional, or state habitat Conservation plan?**

***No Impact.*** There is no operative habitat conservation plan in the City of Antioch. The closest habitat conservation plan is the East Contra Costa County Habitat Conservation Plan/Natural Community Conservation Plan (ECCCHCP). The City is not within the ECCCHCP area, although the ECCCHCP does include the City of Oakley. Area 2a is bordered by the City of Oakley to the east; however, the existing uses in Area 2a are highly industrial and are not identified in the ECCCHCP as significant resource areas. Therefore, the project would not result in conflict with any habitat conservation plan or natural community conservation plan. No mitigation is required.

## V. Cultural Resources

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archeological resource, pursuant to Section 15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Directly or indirectly destroy a unique paleontological resource, site, or unique geologic features?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?

**No Impact.** The City of Antioch's General Plan EIR includes an inventory of historical resources within the City and the City's SOI. There are no mapped historical resources on the project site; however, the General Plan EIR lists the "Marsh Landing" as a historical resource located near the Antioch Bridge (PG&E site). This resource is not mapped.

The proposed project includes a series of procedural actions and would not result in construction or development activities. Any future construction or development in Areas 1, 2a, and 2b would be subject to separate environmental review that would evaluate impacts to known historical resources. Mirant Marsh Landing, LLC, is independently initiating a separate environmental review process for the proposed new power plant that would be located on a portion of Area 1 and would be required by CEQA to identify a substantial adverse change to the significance of any known historical resources located on the power plant project site. Therefore, the proposed project would result in no adverse change in the significance of any historical resource. No mitigation is required.



**b), c), and d) Impacts to archaeological resources, paleontological resources, and human remains?**

***No Impact.*** According to the City's General Plan EIR, numerous paleontological resources have been recorded within the City limits, particularly near the San Joaquin River. Although the project site is located adjacent to the San Joaquin River, there would be no potential to encounter these resources since the project would not result in construction or development activities. The proposed project consists of a series of procedural actions. Any future construction or development in Areas 1, 2a, and 2b involving ground disturbance would be subject to separate environmental review to identify any potential impacts to unknown archaeological resources, human remains, and paleontological resources. No mitigation is required.

## VI. Geology and Soils

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a) Expose people or structures to potential substantial adverse effects including the risk of loss, injury or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iv) Landslide?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Would the project result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on expansive soil, as defined in table 18-1b of the Uniform Building Code (1994), creating substantial risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

a) Expose people or structures to potential substantial adverse effects including the risk of loss, injury or death involving:

i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?

**No Impact.** No evidence of active or recent faulting has been observed on the project site; no active faults or Earthquake Fault Zones (Alquist-Priolo Special Studies Zones) are located on the project site or within the City.<sup>5</sup> However, the San Francisco Bay region is considered to be seismically active and subject to the effects of future earthquakes. Four major, historically active faults are located within 30 miles of the project site:

- Hayward Fault (approximately 26 miles west);
- Calaveras fault (approximately 17 miles southwest);
- Concord-Green Valley fault (approximately 13 miles west);
- Marsh Creek-Greenville fault (7 miles southwest).

The San Andreas Fault, which is the largest regional fault, is located approximately 45 miles west of the City.<sup>6</sup> However, the proposed project would not result in construction or development activities that could increase risks related to fault rupture; rather, the project consists of a series of procedural actions. Any future construction or development in Areas 1, 2a, and 2b would be subject to separate environmental review. As there are no known active faults on the project site or in the immediate vicinity, there would be no impact regarding the risk of fault rupture. No mitigation is required.

ii) Strong seismic ground shaking?

**No Impact.** The project site will likely experience seismic ground shaking similar to other areas in the seismically active San Francisco Bay Area region. Earthquakes along several active faults in the region, as discussed above, could result in moderate to strong ground shaking at the project site. The intensity of earthquake ground motions would depend on the characteristics of the generating fault, distance to the fault and rupture zone, earthquake magnitude, earthquake duration, and site-specific geologic conditions. However, the proposed project would not result in any immediate construction or development activities since the project consists of a series of procedural actions. Any future construction or development in Areas 1, 2a, and 2b involving ground disturbance would be subject to

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<sup>5</sup> City of Antioch. (July 2003). *City of Antioch General Plan Update EIR*. pg. 4.5-16

<sup>6</sup> City of Antioch. (July 2003). *City of Antioch General Plan Update EIR*. pg. 4.5-10

separate environmental review that would address potential impacts from seismic ground shaking. Therefore, implementation of the proposed project would result no impact related to seismic ground shaking. No mitigation is required.

### **iii) Seismic-related ground failure, including liquefaction?**

**No Impact.** Liquefaction is a phenomenon in which saturated soils lose their strength and stiffness as a result of seismic-related ground shaking.<sup>7</sup> According to the City's General Plan EIR, the project site is mostly located within an area that is considered a "Moderate" area of susceptibility to liquefaction, with a limited portion of Area 1 and Area 2a designated as a "High" area susceptible to liquefaction near the San Joaquin River.<sup>8</sup> However, the proposed project would not result in any construction or development activities that would require the classification of subsurface materials to determine soil stability. Rather, the project consists of a series of procedural actions that will not increase any risk of seismic related ground failure, including liquefaction. Any future construction or development in Areas 1, 2a, and 2b would be subject to separate environmental review where soil classification would be required prior to issuance of any grading or building permits. There would be no impact related to seismic related ground failure. No mitigation is required.

### **iv) Landslides?**

**No Impact.** The majority of the project site consists of flat or gently sloping topography. According to the City's General Plan EIR, the project site is located within areas that are considered "Very Stable," with areas of 0 to 5 percent slope that are not underlain by landslide deposits, "Generally Stable," with areas of 5 to 15 percent slope that are not underlain by landslide deposits, and "Generally Stable to Marginally Stable," with areas of greater than 15 percent slope that are not underlain by landslide deposits or bedrock units susceptible to landsliding.<sup>9</sup> However, the proposed project consists of a series of procedural actions and thus would not result in construction or development. Any future construction or development in Areas 1, 2a, and 2b would be subject to separate environmental review where soil classification would be required prior to issuance of any grading or building permits. Therefore, there would be no impact related to landslides. No mitigation is required.

### **b) Would the project result in substantial soil erosion or the loss of topsoil?**

**No Impact.** The proposed project consists of a series of procedural actions and would not result in construction or development activities. Any future construction or development in Areas 1, 2a, and 2b would be subject to separate environmental review where any potential

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<sup>7</sup> Saturated soils are soils in which the space between individual soil particles is completely filled with water.

<sup>8</sup> City of Antioch. (July 2003). *City of Antioch General Plan Update EIR*. (Figure 4.5.4)

<sup>9</sup> City of Antioch. (July 2003). *City of Antioch General Plan Update EIR*. (Figure 4.5.5)

impacts resulting in soil erosion or loss of topsoil would be analyzed. Therefore, implementation of the proposed project would not result in any impact related to soil erosion or loss of topsoil. No mitigation is required.

**c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?**

and

**d) Be located on expansive soil, as defined in table 18-1b of the Uniform Building Code (1994), creating substantial risks to life or property?**

***No Impact.*** The proposed project would not result in construction or development activities since the project consists of a series of procedural actions. Any future construction or development in Areas 1, 2a, and 2b would be subject to separate environmental review where any potential impacts related to construction on unstable or expansive soils would be analyzed and mitigation measures incorporated. Therefore, implementation of the proposed project would not result in any impact related to unstable or expansive soil conditions. No mitigation is required.

**e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?**

***Less Than Significant Impact.*** Existing residential units in Area 2b currently use septic tanks as do the existing marinas in Area 2a and the existing industrial uses in Area 1. Most of these residential units are within Area 2b. Implementation of the proposed project would allow the project area to be connected to the City's sanitary sewer system, potentially allowing for some or all of the residences using septic systems to be connected to the municipal sewer system. Moreover, the project consists of a series of procedural actions and does not include construction or development activities. Any future construction or development in Areas 1, 2a, and 2b would be subject to separate environmental review. The project would result in a less than significant impact related to septic tanks. No mitigation is required.

## VII. Hazards and Hazardous Materials

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
evacuation plan?				
h) Expose people or structures to the risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?**

**and**

**b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?**

**No Impact.** Because most of Area 1 is zoned for industrial uses, hazardous materials are most likely used and stored in this area. Additionally, the residential units currently on the project site (mostly in Area 2b) could be using small volumes of common household hazardous materials, such as cleaning agents.

A record search of hazardous materials releases and management sites (e.g., locations of above ground storage tanks) reported by federal, state, and local agencies was conducted for Areas 1, 2a, and 2b.<sup>10</sup> The report lists at least one record for each of 22 sites for Area 1 and seven sites for Area 2a and indicates that all sites are either closed or actively managed. No records were returned for Area 2b. There would be no new sources of hazardous waste generation, hazardous material use, or sources of hazardous exposure associated with implementing the proposed project since the project consists of a series of procedural actions; the project does not include construction or development. Any future construction or development in Areas 1, 2a, and 2b would be subject to separate environmental review. Therefore, implementation of the proposed project would not result in any impact related to the routine use, transport, or disposal of significant quantities of hazardous materials or the upset and accidental conditions involving hazardous materials. No mitigation is required.

<sup>10</sup> Environmental Data Resource, Inc. (EDR). December 2007. The EDR Radius Map with Geocheck: The Northeast Antioch Reorganization.

**c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?**

**No Impact.** Delta Christian College, Cornerstone Christian School, and Shining Star Christian Academy are currently located within one-quarter mile south of the project site. These schools are closest to Area 2b which consists of mainly residential uses. However, as noted above, the proposed project would not involve the use, transport, or disposal of hazardous materials, and would not create a significant hazard to the public or the environment since the project consists of a series of procedural actions. Any future construction or development in Areas 1, 2a, and 2b would be subject to separate environmental review. No impact would occur and no mitigation is required.

**d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and as a result, would it create a significant hazard to the public or the environment?**

**No Impact.** The project site was not identified as a hazardous materials site on any of the local or state regulatory agency database lists pursuant to Government Code Section 65962.5. Therefore, no impact would occur and no mitigation is required.

**e) and f) Proximity to Airport/Private Airstrip?**

**No Impact.** The closest public use airports to the project site are Byron Airport and Buchanan Field. Byron Airport is located about 14.5 miles to the southeast; Buchanan Field is about 15 miles to the west. The closest private airstrip to the project site is the Funny Farm Airport, located 8 miles to the east beyond the City of Brentwood. The distance from airports and private airstrips ensures that the project would not be adversely affected by airport operations. Furthermore, no impact would occur since the project consists of a series of procedural actions. No mitigation is required.

**g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?**

**No Impact.** The project site is currently under the jurisdiction of the Contra Costa County Fire Prevention District (CCCFPD), which serves extensive areas within both unincorporated and incorporated Contra Costa County. The proposed project consists of a series of procedural actions, would not introduce any new construction or development that would alter existing conditions, and therefore would result in no impact that would impair or physically interfere with the provision of emergency services or existing emergency evacuation plans. No mitigation is required.



**h) Expose people or structures to the risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?**

***No Impact.*** The project site is surrounded by industrial uses, residential development, agricultural uses, and open space areas, and is not located in the vicinity of areas that could be characterized as wildlands. Additionally, the proposed project consists of a series of procedural actions; any future construction or development in Areas 1, 2a, and 2b would be subject to separate environmental review. No impact would occur and no mitigation is required.

## VIII. Hydrology and Water Quality

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a) Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially alter the existing drainage patterns of the site or area including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on-or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted run-off?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
g) Place housing within a 100-year flood hazard area as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
j) Inundation by seiche, tsunami, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

#### a) and f) Impacts to water quality?

**Less than Significant Impact.** Facilities located on the project site are either on septic tanks or do not have a registered septic utility. Many of these existing septic tanks are believed to be older and are thus vulnerable to failure. The Contra Costa Environmental Health Division reviewed the conditions, specifically on properties within Area 2b, and noted that 50 to 75 percent of the septic systems were on the verge of failing.<sup>11</sup> The proposed reorganization itself would not result in any immediate water quality changes, but over time, as connections to City services are implemented, it is reasonable to assume that the impact on water quality would be beneficial because the existing septic systems could be replaced with facility connections to the City and DDSW wastewater infrastructures.

Consequently, the potential for contamination of groundwater wells would be reduced due to the proposed reorganization. The project would therefore result in a beneficial impact that would be considered less than significant. No mitigation is required.

<sup>11</sup> Contra Costa County Local Agency Formation Commission. December 2007. *Water and Wastewater Services Municipal Services Review for East Contra Costa County*.

**b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted?**

**No Impact.** The project itself would not result in any immediate water groundwater impact in that the proposed reorganization involves a series of procedural actions. However, over time, as residential properties currently drawing water from private wells are connected to the municipal water system, it is reasonable to assume that the impact on groundwater would be beneficial. With each connection to the municipal water system, water production from private wells drawing upon groundwater would be expected to decrease. In all, the project would result in a less than significant (beneficial) impact. No mitigation is required.

**c), d) e) Impacts to drainage patterns?**

**Less than Significant Impact.** The project would result in the reorganization of the project area into the City and DDS. There would be no substantial adverse change to drainage flow as a result of implementation of the proposed reorganization, as no construction or development is associated with the project.

If the project area is reorganized into the City and DDS, the City's stormwater drainage requirements would apply and it is anticipated that these requirements would be implemented over time as new development occurs. As these City requirements are implemented, it is reasonable to assume that a beneficial impact to drainage patterns would occur, insofar as the project area is currently lacking any formal system to control stormwater drainage. Therefore, implementation of the proposed project would result in a beneficial and thus less than significant impact to project area drainage patterns. No mitigation is required.

**g), h), and i) Flooding or other hazards?**

**No Impact.** According to maps prepared by the Federal Emergency Management Agency (FEMA), the portions of the land adjacent to the San Joaquin River of Area 1 and Area 2a are located within the 100-year flood hazard zone.<sup>12</sup> The Contra Loma Dam is the closest dam to the project site. The City-wide inundation map for the failure of Contra Loma Dam and Dike No. 2 indicates that the project site is not located in the areas that would be impacted by this dam failure.<sup>13</sup> Furthermore, implementation of the proposed project involves a series of procedural actions and would not introduce any new construction or

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<sup>12</sup> Federal Emergency Management Agency. (June 16, 2009). *Federal Insurance Rate Map No.06013C0143F, No.06013C0144F, Contra Costa County.*

<sup>13</sup> City of Antioch. (November 2003). *City of Antioch General Plan.* (Figure 4.7.3).

development that would alter existing conditions in the area. Future development within the project area would be subject to separate CEQA review to determine if such development could result in an increased risk of flooding and related hazards. Future development within the 100-year flood plain would be required to implement improvements to remove proposed development from the flood zone. The project would result in no impact related to increased flood risk. No mitigation is required.

**j) Inundation by seiche, tsunami, or mudflow?**

***No Impact.*** The project site is located over 40 miles from the Pacific Ocean. Tsunamis typically affect coastlines and areas up to ¼ mile inland. Due to the project's distance from the coast, potential impacts related to a tsunami are minimal. As neither steep slopes nor volcanoes are located in close proximity to the project site, the possibility of inundation by landslides or volcanic mudflows is remote. The project site is located adjacent to the San Joaquin River. However, implementation of the proposed project involves a series of procedural actions, would not introduce any new construction or development that would alter existing conditions in the area and would therefore result in no impact related to the risk of inundation by seiche, tsunami, or mudflow. No mitigation is required.

## IX. Land Use and Planning

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### a) Physically divide an established community?

**No Impact.** The project site is mainly bordered by land under the City of Antioch's jurisdiction. Implementation of the proposed project would remove the political distinctions currently existing between the project area and the surrounding City of Antioch. The project includes no physical changes that could divide any established community. No mitigation is required.

### b) Conflict with relevant land use plan, policy, or regulation?

**Less than Significant Impact.** Areas 1, 2a, and 2b are located in unincorporated Contra Costa County, and are also located within the City's SOI; therefore, both the County and City have adopted land use designations for these lands.

**Pre-Zoning:** As shown on **Figure 5**, the City proposes pre-zoning that is consistent with the City's current General Plan land use designations.

**Area 1:** As a part of the proposed reorganization, the City intends to pre-zone Area 1 as Heavy Industrial (M-2), except for the Antioch Dunes National Wildlife Refuge which would be pre-zoned Open Space (OS).

*Area 2a:* The northern portion of Area 2a would be pre-zoned as Urban Waterfront (WF) while the southern portion of Area 2a would be pre-zoned Regional Commercial (C-3).

*Area 2b:* The City would pre-zone Area 2b as a Study Zone (S), allowing the existing County zoning designation to remain until the City adopts its own land use designations, to be determined at such time in the future. The proposed reorganization is consistent with the City and County general plans, and the City and DDSD 5-year CIPs.

*General Plan:* In 2003, the City Council adopted General Plan land use designations for the project area as part of the General Plan update. The proposed pre-zoning would be consistent with the current General Plan land use designations for the project site.

*LAFCO:* LAFCO policies discourage the creation of islands through annexation. The proposed reorganization of Areas 1, 2a, and 2b would unify the area into the City's jurisdiction, and would remove the existing island of County land that currently exists within the City limits.

Furthermore, LAFCO policies and the City's General Plan require areas to be annexed or reorganized must be pre-zoned by the City and as appropriate, proof of necessary service, facility capacity, and an indication of intent to serve must be provided. As noted above, the City intends to pre-zone all subareas to be consistent with existing General Plan designations.

The only change to the current land use associated with the proposed reorganization would be a formal adoption of this zoning and a 2-year freeze on rezoning of that property after completion of the reorganization, pursuant to Government Code §56375. Thus, the project would not conflict with any existing land use plans or policies. No mitigation is required.

**c) Conflict with any applicable habitat conservation plan?**

***No Impact.*** There is no operative habitat conservation plan in the City of Antioch. The closest habitat conservation plan is the East Contra Costa County Habitat Conservation Plan/Natural Community Conservation Plan (ECCCHCP). The City is not within the ECCCHCP area, although the ECCCHCP does include the City of Oakley. Area 2a is bordered by the City of Oakley to the east; however, the existing uses in Area 2a are highly industrial and are not identified in the ECCCHCP as significant resource areas. Therefore, the project would not result in conflict with any habitat conservation plan or natural community conservation plan. No mitigation is required.

## X. Mineral Resources

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### a) and b) Result in the loss of availability of a known mineral resource and/or the availability of a locally important mineral resource recovery site?

**No Impact.** According to the Contra Costa County General Plan, the project site is not classified or designated within a mineral resource zone. Furthermore, the City's General Plan EIR states that none of the areas identified in the General Plan for redevelopment contain mineral resources that would be of value to the region and residents of the state. In sum, the proposed project would have no impact to mineral resources. No mitigation is required.



## XI. Noise

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a) Result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of the other agencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in exposure of persons to or generation of excessive ground borne vibration or ground borne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project located within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### **a), b), c) and d) Impacts related to temporary and permanent noise levels, ground borne noise levels and ground borne vibration levels?**

**No Impact.** Implementation of the proposed project would not create new sources of noise since there would be no change to the existing uses of Areas 1, 2a, and 2b. The

project consists of a series of procedural actions. If and when any infrastructure improvements are implemented within the project area, temporary noise impacts could occur during installation. If and when detailed engineering plans for portions of the overall infrastructure improvement plan are developed for the project area, the City will make a determination of the potential for such improvements to result in temporary noise impacts.

A potential increase in permanent noise levels on the project site would be based on land use changes or transportation changes. There are no land use or transportation changes associated with the project since the project consists of a series of procedural actions.

Mirant Marsh Landing, LLC, has initiated a separate environmental review for the proposed power plant that would be located on a portion of Area 1. This environmental review would include an analysis of potential permanent noise impacts and mitigation measures associated with a new power plant. All future construction or development in Areas 1, 2a, and 2b would be subject to separate environmental review which would identify potential impacts and mitigation measures related to temporary and permanent increases in noise levels. Therefore, the proposed project would not result in any temporary or permanent increase in noise levels, ground-borne noise levels, or ground-borne vibration levels. No mitigation is required.

**e) and f) Located within an airport land use plan/vicinity of a private airstrip?**

**No Impact.** The project area is not located within an airport land use plan, within two miles of an airport, nor within the vicinity of any private airstrip. The closest public use airports to the project site are Byron Airport and Buchanan Field. Byron Airport is located about 14.5 miles to the southeast and Buchanan Field is about 15 miles to the west. The nearest private airstrip, Funny Farm Airport, is located 8 miles to the southeast. Due to the project's distance from and the flight path orientation of these airports, there is no impact with regard to the noise impacts from aircraft noise sources. No mitigation is required.

## XII. Population and Housing

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a) Induce substantial population growth in an area, either directly, (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### a) Induce substantial population growth?

***Less Than Significant Impact.*** Although the project could create the opportunity to potentially extend infrastructure and improve roads within Areas 1, 2a, and 2b, the project would not induce population growth since these areas are currently developed with existing uses. Any future construction or development in Areas 1, 2a, and 2b would be subject to separate environmental review. In most cases the City and County General Plan designations are in agreement, and the proposed city pre-zoning matches the land uses envisioned by the County General Plan. Notable exceptions include the following:

- A portion of Area 2a is currently designated by the County for heavy industrial uses. The City's General Plan envisions commercial and marina uses. The City's proposed pre-zoning indicates Urban Waterfront (WF) and Service Commercial uses (C-3).
- The County General Plan includes a wide mix of General Plan designations for Area 2b, including Heavy Industrial, Open Space, Public Space, and Single-Family Residential. The City's General Plan largely follows the intent of these designations, although the City's General Plan proposes a Business Park in lieu of Heavy Industrial along East 18<sup>th</sup> Street.

Notably, Areas 1 and 2a comprise substantial portions of the "Eastern Employment Area"

within the City's General Plan. Most of Area 2b was not included within the Eastern Employment area, but its potential buildout as residential was assumed within the City's General Plan/EIR. Please refer to Tables 3.A and 3.B of the City's General Plan EIR (attached).

Development of Areas 1, 2a, and 2b pursuant to the City's planned land use designations could result in an intensification of development and traffic. However, the City's 2003 General Plan EIR included the aforementioned program-level evaluation of development of the unincorporated areas, assuming more than 7 million square feet of new business park development within the Eastern Employment Focus Area. As shown in Table 3.B, the General Plan EIR also conservatively assumed development of up to about 300 new residential units in unincorporated areas outside the Eastern Employment Focus Area (such as Area 2b); however, Area 2b is already developed and its incorporation would not result in "new" residential development.

Therefore, the environmental impacts of the pre-zoning proposed as part of the Northeast Antioch Area Reorganization has already been analyzed at a programmatic level. Any future construction or development in Areas 1, 2a, and 2b would be subject to separate project-level environmental review once the specific components and extent of each project is known.

The project would slightly increase the City's population by adding the residents currently located in unincorporated areas to the City of Antioch. According to the California Department of Finance, the estimated 2009 population of the City of Antioch is 100,957 persons.<sup>14</sup> The addition of the 273 residents of the project area to the City of Antioch would result in an approximately 0.3% increase to the City's estimated population.<sup>15</sup> Furthermore, as this population already resides in the area, using local streets, shops, parks, schools, and other amenities, this increase in population is found to be less than significant in terms of growth. No mitigation is required.

#### **b) and c) Displace housing or people?**

**No Impact.** The proposed project would not result in construction or development activities since the project consists of a series of procedural actions. The reorganization of the project area into the City and the DDSD would not displace any people or housing. Any future construction or development in Areas 1, 2a, and 2b would be subject to separate environmental review. Thus, the project would not result in the displacement of any homes or businesses. No mitigation is required.

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<sup>14</sup> California Department of Finance. May 2009. *E-1 population Estimates for Cities, Counties and the State with Annual Percent Change — January 1, 2008 and 2009.*

<sup>15</sup> Gruen Gruen and Associates. 2009. *The Fiscal Impacts of the Northeast Antioch Annexation.* January. (Table I-1)

### XIII. Public Services

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
i) Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii) Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii) Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iv) Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
v) Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:**

**i) Fire protection impacts?**

**No Impact.** The Contra Costa County Fire Protection District (CCCYPD) currently provides fire and emergency services to residents of the City as well as other incorporated and unincorporated areas of the County. The CCCYPD already provides services to the

project site and implementation of the proposed project would not result in any changes to fire and emergency service provision. No impact to fire services would occur. No mitigation is required.

## **ii) Police protection impacts?**

***Less Than Significant Impact.*** Implementation of the proposed project would allow Areas 1, 2a, and 2b to receive City services, including police protection from the Antioch Police Department (APD). The project site is located in the City's SOI and is currently surrounded on 2 sides by existing areas within the City of Antioch and would be near other areas currently served by APD. The Antioch General Plan establishes a response time goal of 7 to 8 minutes for "Priority 1" (emergency) calls. As of 2009, the APD reports that the average response time for a Priority 1 call is seven minutes and 22 seconds. To this end, the APD currently meets its response time goal set forth by the General Plan.

The APD is currently staffed with 107 sworn officers, which represents a staffing ratio of approximately 1.060 officers per 1,000 residents.<sup>16</sup> The Antioch General Plan provides a service ratio goal of 1.2 to 1.5 officers per 1,000 residents. The City provides the APD with sufficient budget to achieve this service ratio goal. With implementation of the proposed project, the staffing ratio would change from 1.060 officers per 1,000 residents to approximately 1.057 officers per 1,000 residents. However, according to the Antioch Police Department, this minor increase in the City's population would not significantly worsen the ratio of police staff to population or adversely affect response time in the near term.<sup>17</sup> Furthermore, based on the fiscal data contained in the analysis of the annexation (See **Appendix C**), the net revenue generated by the annexation of Areas 1, 2a, and 2b would be sufficient to offset public safety and other service costs. Implementation of the project would therefore not create significant additional demands on police services such that construction or expansion of new facilities would be required and would result in a less than significant impact. No mitigation is required.

## **iii) School impacts?**

***No Impact.*** Implementation of the proposed project would not increase the enrollment in area schools since existing residents in the project area are within the attendance boundaries of the Antioch Unified School District. School-aged children within the project area already attend schools in the Antioch Unified School District. Therefore, reorganization of Areas 1, 2a, and 2b would have no impact to area schools. No mitigation is required.

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<sup>16</sup> Allan Cantando, Captain, Antioch Police Department. Personal Communication, October 20, 2009.

<sup>17</sup> Allan Cantando, Captain, Antioch Police Department. Personal Communication, October 20, 2009.

**iv) and v) Park and other public facility impacts?**

***No Impact.*** As discussed in **Section XI, Population and Housing**, the project would slightly increase the City's population by adding the residents currently located on the project site to the City's population count that were previously considered under the County's population. However, the approximate 0.3% increase in the City's population is not considered significant. Given proximity of City of Antioch park facilities to the project area, it is quite likely that residents of the project area already use City parks. Implementation of the project would therefore not create significant additional demand on existing parks and other public facilities near the project site such that construction or expansion of new facilities would be required. No impact would occur and no mitigation is required.

#### XIV. Recreation

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

#### a) Increase use of existing facilities?

and

#### b) Include/require construction of new facilities?

**No Impact.** As discussed in **Section XI, Population and Housing**, the project would slightly increase the City's population by adding residents currently located in Contra Costa County. However, this approximate 0.3% increase in the City's population is not considered significant, as residents of the project area currently utilize City of Antioch recreational facilities and programs to the extent such facilities and programs do not require one to be a resident of the City. Implementation of the project would therefore not create significant additional demands on existing recreational parks and facilities near the project site such that construction or expansion of new facilities would be required. No impact would occur to recreational facilities in the area and no mitigation is required.



## XV. Transportation and Traffic

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially increase hazards to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Result in inadequate parking capacity?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Conflict with adopted policies, plans or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?

and

b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?

**No Impact.** The city utilizes level of service standards to evaluate the performance of the circulation system. Although the project could potentially extend roads and infrastructure to Areas 1, 2a, and 2b, the project would not induce population growth or result in any change to the existing uses on the project site. No increase in traffic would result from implementation of the proposed project since the project consists of a series of procedural actions. Any future construction or development in Areas 1, 2a, and 2b would be subject to separate environmental review. The project would not adversely affect level of service standards and would not conflict with any applicable city plan, ordinance, or policy. No mitigation is required.

c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?

**No Impact.** The project site is not located within an airport land use plan. The closest public use airports to the project site are Byron Airport and Buchanan Field. Byron Airport is located about 14.5 miles to the southeast; Buchanan Field is about 15 miles to the west. Owing to this distance, implementation of the project would have no impact on air traffic patterns. No mitigation is required.

d) Substantially increase hazards to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

**Less Than Significant Impact.** The proposed project consists of a series of procedural actions. These include the imposition of City of Antioch street standards on all public roadways in the project area. At present, many existing roadways in the project area lack improvements such as pavement, crosswalks, sidewalks, and similar features that reduce transportation hazards. Over the long term, as properties within the project area are developed, the City would impose improvements to the public rights of way as conditions of approval to comply with the City of Antioch street standards in effect at that time. Therefore, the project would have a long term beneficial impact with regard to design hazards; for the purposes of this evaluation, the project is assumed to have a less than significant impact. No mitigation is required.

**e) Result in inadequate emergency access?**

**No Impact.** The project site is currently under the jurisdiction of the Contra Costa County Fire Prevention District (CCCFPD), which serves extensive areas within Contra Costa County. Implementation of the proposed project would not change the existing emergency access to the site since the proposed project consists of a series of procedural actions. Over the long term, as properties within the project area are developed, the City would conduct separate environmental review and would require any new development to comply with City and CCCFPD emergency access standards. However, the project would not introduce any new construction or development that would alter existing conditions, and therefore would result in no impact to emergency access. No mitigation is required.

**f) Result in inadequate parking capacity?**

**No Impact.** The proposed project consists of a series of procedural actions and would not affect existing parking capacity on the project site. Over the long term, as properties within the project area are developed, the City would require each development to adhere to City of Antioch parking capacity requirements. However, the project would not introduce any new construction or development that would alter existing conditions, and therefore would result in no impact to parking capacity. No mitigation is required.

**g) Conflict with adopted policies, plans or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?**

**Less Than Significant Impact.** The proposed project consists of a series of procedural actions. These include the imposition of City of Antioch alternative transportation standards on all public roadways in the project area. At present, many existing roadways in the project area lack improvements such as bus turnouts for public bus routes. Over the long term, as properties within the project area are developed, the City would impose improvements to the public rights of way as conditions of approval to adhere to the City of Antioch alternative transportation standards in effect at that time. Therefore, the project would have a long term beneficial impact with regard to compliance with alternative transportation plans; for the purposes of this evaluation, the project is assumed to have a less than significant impact. No mitigation is required.

## XVI. Utilities and Service Systems

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Comply with federal, state, and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### a), b), and e) Wastewater impacts?

**Less than Significant Impact.** The proposed reorganization would bring unincorporated areas into the City and DDS D service areas. The DDS D wastewater system infrastructure includes a conveyance system (i.e., pumping stations, equalization basins, and trunk lines) in the City and surrounding areas and a wastewater treatment plant, recycled water facility, and discharge facilities on the Pittsburg-Antioch border. DDS D updates its comprehensive 5-year capital improvement program annually to plan system upgrades and improvements. The only system upgrade that is planned in the project area is the expansion of the Bridgehead Pump Station.<sup>18</sup> This upgrade would serve Areas 1 and 2a.

The project includes conceptual plans for a new 15-inch sewer line that would extend west along Wilbur Avenue and would serve Areas 1 and 2b. Proposed 8-inch sewer lines within Area 2b would serve existing residences in the area, as shown in **Figure 7**. An 8-inch sewer line is proposed for Area 2a that would feed into the planned 15-inch sewer line along Wilbur Avenue. All proposed sewer lines would provide connections to existing lines in the area that are served by the existing sewer system.

No new treated water or wastewater treatment facilities would be required as a result of a reorganization of Areas 1, 2a, and 2b. The City and DDS D are planning for a population increase of approximately 1 percent annually through 2025 in their respective service areas; the addition of the residents in Areas 2a and 2b would fall within the anticipated population increase.<sup>19</sup> The recently expanded Bridgehead Pump Station would serve Areas 1, 2a and likely 2b, if and when trunk lines are constructed, depending upon residents/property owner's interest in connecting to municipal facilities). **Portions of the reorganization area would have sewage flow routed through the DDS D Antioch Pump Station, as shown in Figure 7.**

No other upgrades or extensions to the wastewater conveyance planning would be necessary as a result of the proposed project. Furthermore, any future construction or development in Areas 1, 2a, and 2b would be subject to separate environmental review. Therefore, implementation of the proposed project would result in a less than significant impact related to wastewater. No mitigation is required.

### c) Stormwater facility impacts?

**No Impact.** The project consists of a series of procedural actions, including the adoption of conceptual plans to improve infrastructure in the project area, including stormwater catch basins and conveyance systems. As more detailed plans for these facilities are developed,

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<sup>18</sup> Contra Costa ~~County~~ Local Agency Formation Commission. December 2007. *Water and Wastewater Services Municipal Services Review for East Contra Costa County*.

<sup>19</sup> City of Antioch. March 2008. *Initial Study and Negative Declaration: Northeast Antioch Reorganization*.

including the precise timing, location and other details, the City will examine whether the construction of these facilities could have a significant environmental impact. Therefore, the present project would result in no impact to stormwater facilities. No mitigation is required.

**d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?**

***Less than Significant Impact.*** The City of Antioch's 2005 Urban Water Management Plan (UWMP) examines water demand through the year 2025 and is included as **Appendix D**. The UWMP shows Areas 1, 2a, and 2b are located within pressure Zone II which serves primarily residential and commercial users within the City. UWMP assumes some new industrial uses in Zones I & II. Residential uses were assumed to exist in most other areas of the UWMP. Since Areas 1, 2a, and 2b are located within the City's Sphere of Influence, the UWMP included these areas in the growth assumptions for its projections of new water demand through 2025.

Although some properties in Areas 1, 2a, and 2b have had wells or other sources of water besides the City of Antioch, the UWMP assumed development and water use in these areas consistent with City zoning. Figure 2-2 in the UWMP shows Areas 1 and 2a with an industrial zoning classification; Area 2b is shown to have residential and park zoning.

With these land use assumptions and ABAG Projections, UWMP predicted total water demand in the City by horizon year of 2025. UWMP examined various rainfall scenarios -- normal, single dry year, multiple dry year, etc. -- and concluded that in all examined scenarios, City water supply would significantly exceed anticipated demand, even in multiple dry year scenarios. Therefore, the City of Antioch has sufficient water supplies available to serve the project from existing entitlements and resources through at least the year 2025 and the project would have a less than significant impact on water supply. No mitigation is required.

**f) and g) Landfill and solid waste impacts?**

***No Impact.*** Implementation of the proposed project would not result in any changes to the land uses currently in the project area since the project involves a series of procedural actions, and therefore, would not introduce any new construction or development that would alter existing conditions in the area. The project would not introduce any reasonably foreseeable change to the amount of solid waste generated by existing uses. Any future construction or development in Areas 1, 2a, and 2b would be subject to separate environmental review. Solid waste management hauling and disposal services would continue as currently conducted and no impact to solid waste and landfill capacity would occur. No mitigation is required.

## XVII. Mandatory Findings of Significance

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a) Have the potential to degrade quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Have impacts that are individually limited, but cumulatively considerable? (“Cumulatively considerable” means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**a) Have the potential to degrade quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?**

**No Impact.** The proposed project consists of a series of procedural actions and would not result in any impacts to biological resources or cultural resources. Any future construction

or development in the project area would be subject to separate environmental review. Therefore, the project would not have the potential to degrade the quality of the environment; affect habitat, fish, and wildlife species; or cultural resources.

**b) Have impacts that are individually limited, but cumulatively considerable? (“Cumulatively considerable” means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?**

**No Impact.** The proposed project would result in impacts of less than significant levels and no mitigation is required. The proposed reorganization was included in the overall growth assumptions in the City’s SOI and the impacts of buildout of the City was disclosed and analyzed as part of the General Plan and General Plan EIR. Therefore the project would not result in any cumulatively considerable impacts that were not already identified in the General Plan EIR.

**c) Have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?**

**No Impact.** The proposed project involves a series of procedural actions and would have no adverse effect on human beings.



The following studies and reports were prepared specifically for the project and are included as appendices to this mitigated negative declaration. Appendix A and Appendix E are included in this document. Copies of the other appendices are available from the city upon request.

**Appendix A:** CirclePoint (2010). *CEQA Guidelines Amendments. Appendix G – Environmental Checklist.*

**Appendix B:** Loewke, Richard T. (2005) Northeast Antioch Annexation Feasibility Study: Strategic Plan for Phased Annexation.

**Appendix C:** Gruen Gruen and Associates. (2009) The Fiscal Impacts of the Northeast Antioch Annexation.

**Appendix D:** Brown and Caldwell. (2006) City of Antioch Urban Water Management Plan Update: Final Report.

**Appendix E: Responses to comment letters received on the Draft IS/MND**

### **All Sources Consulted**

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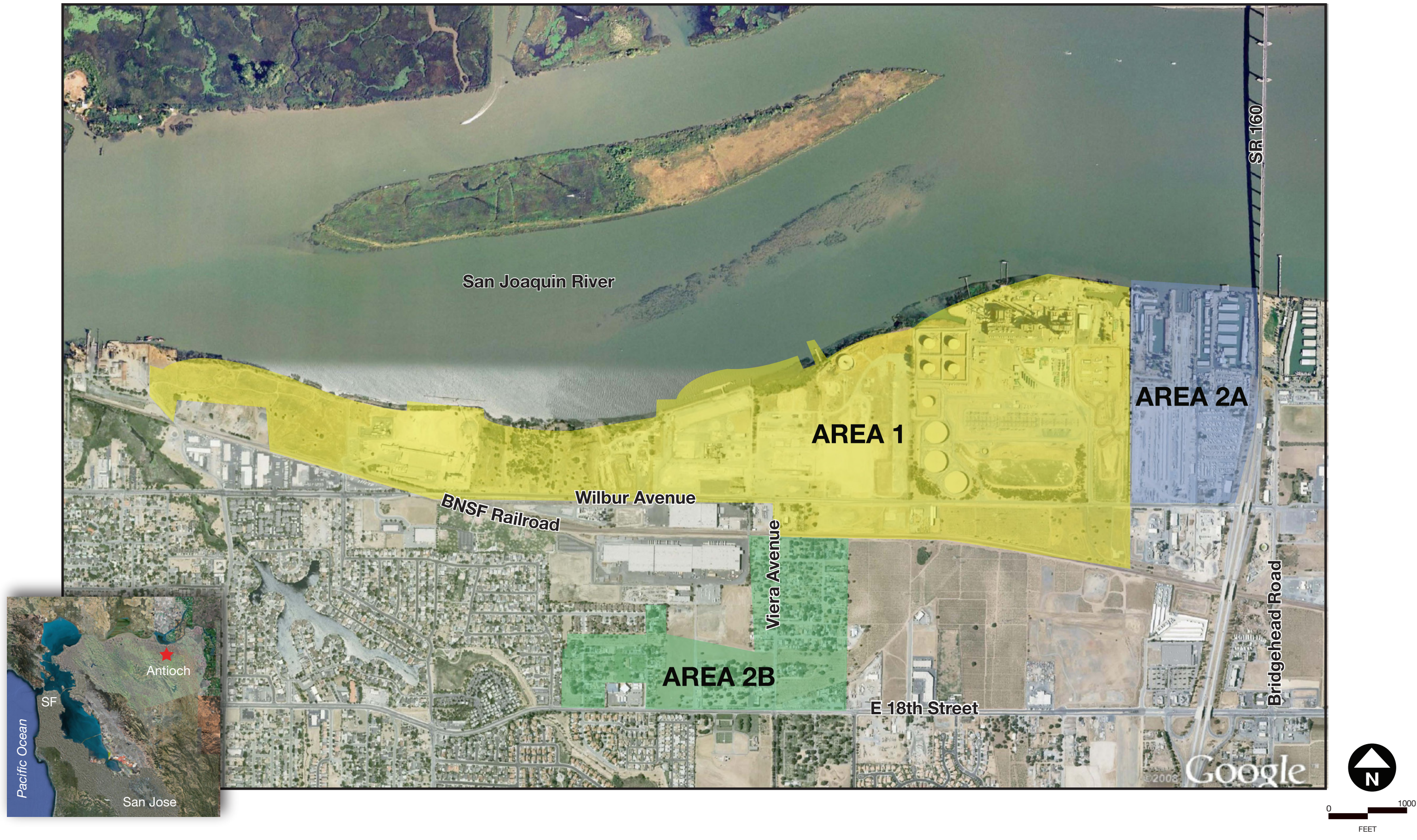
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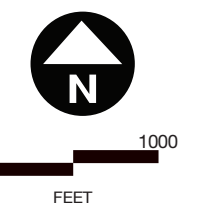
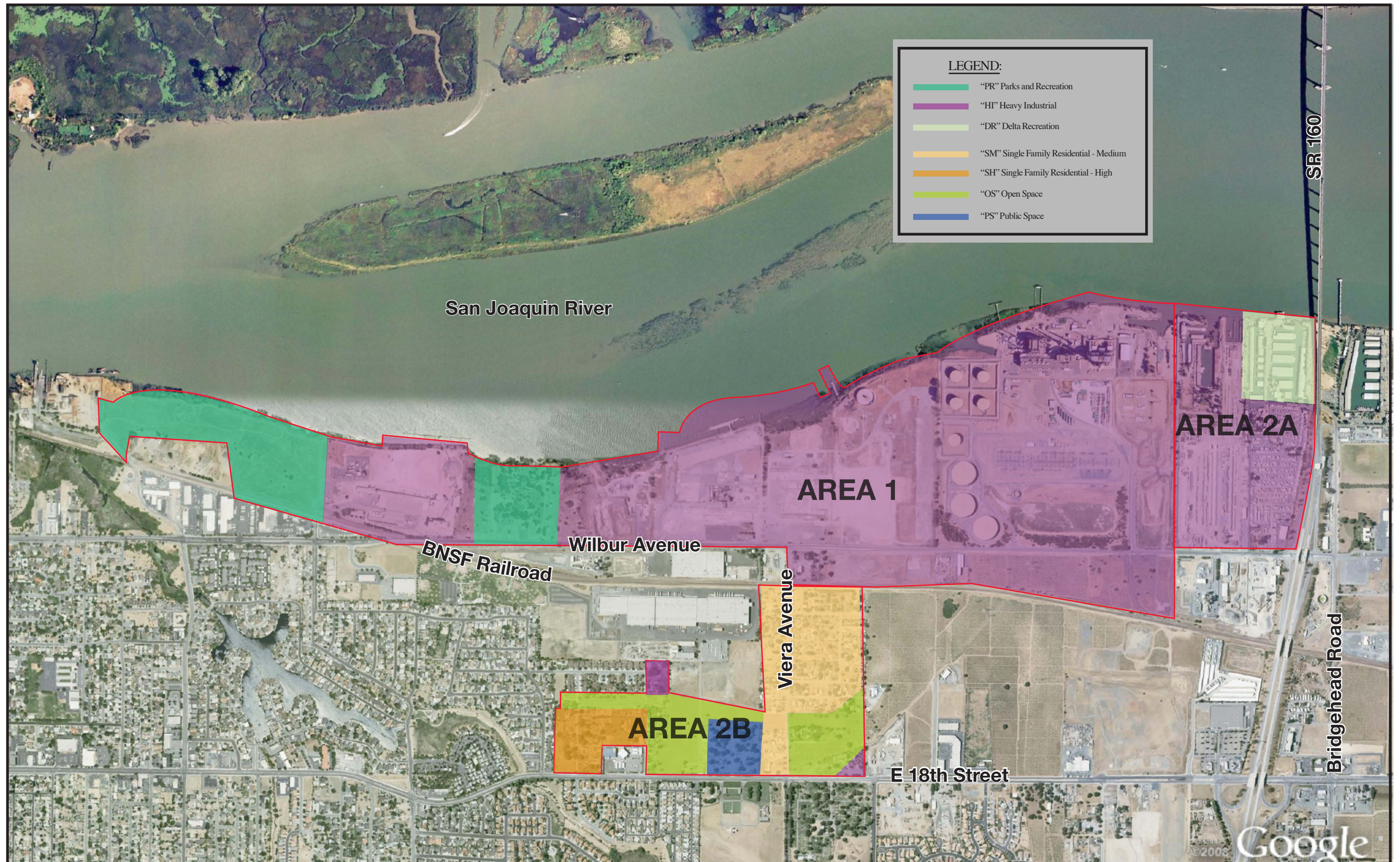
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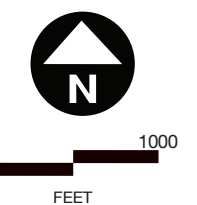
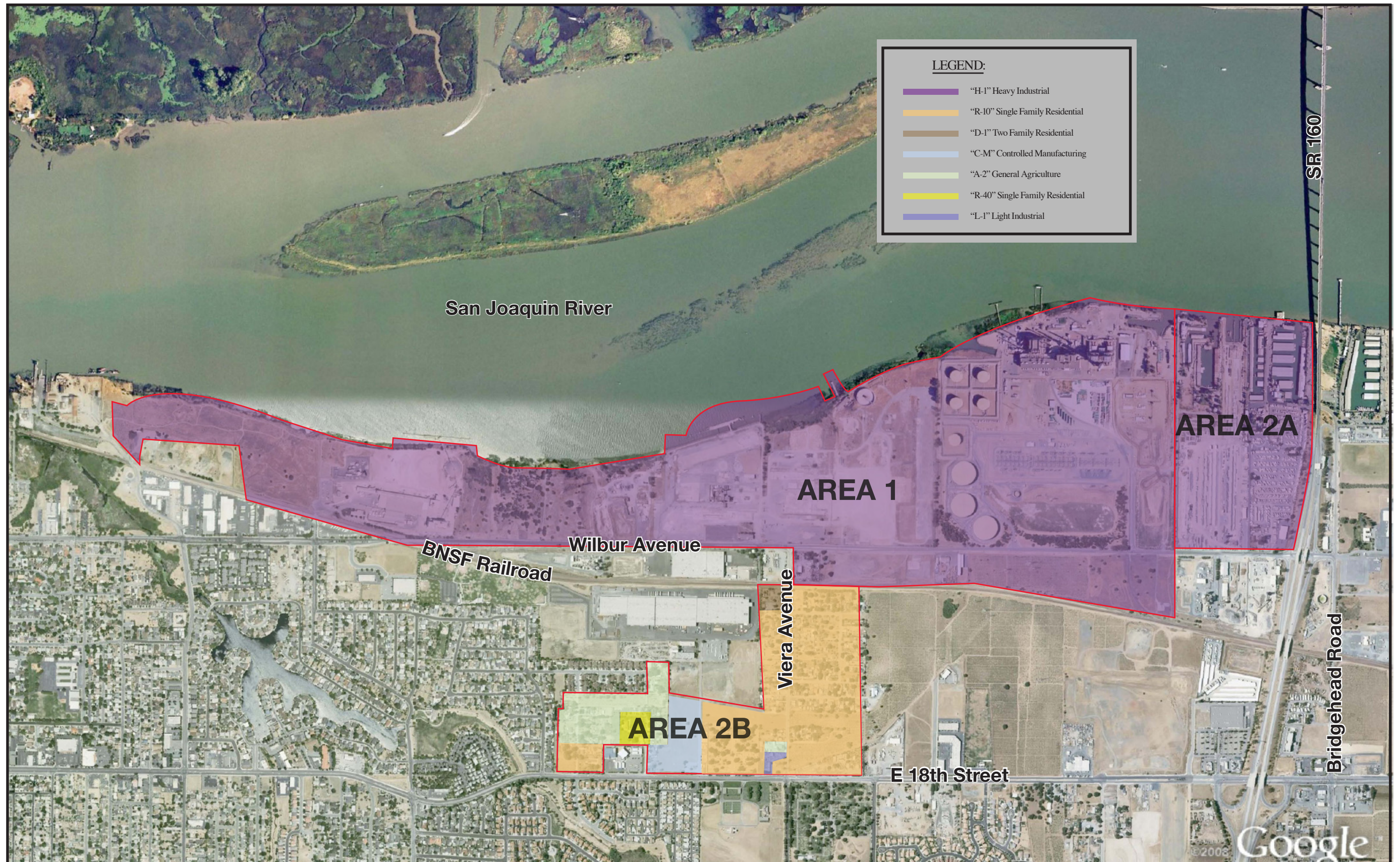




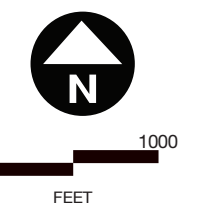
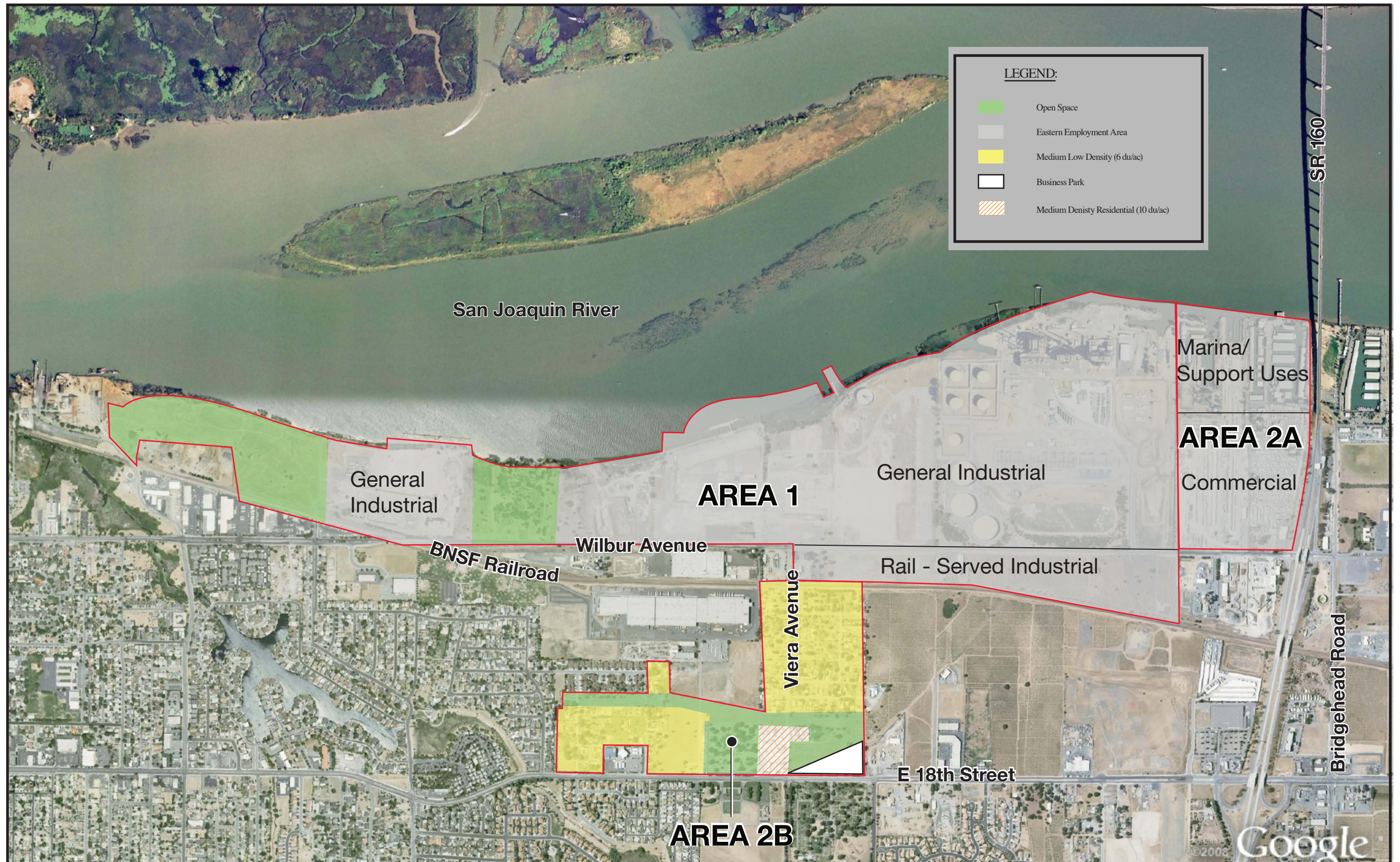




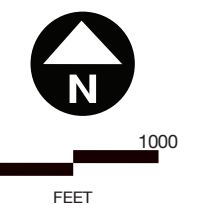




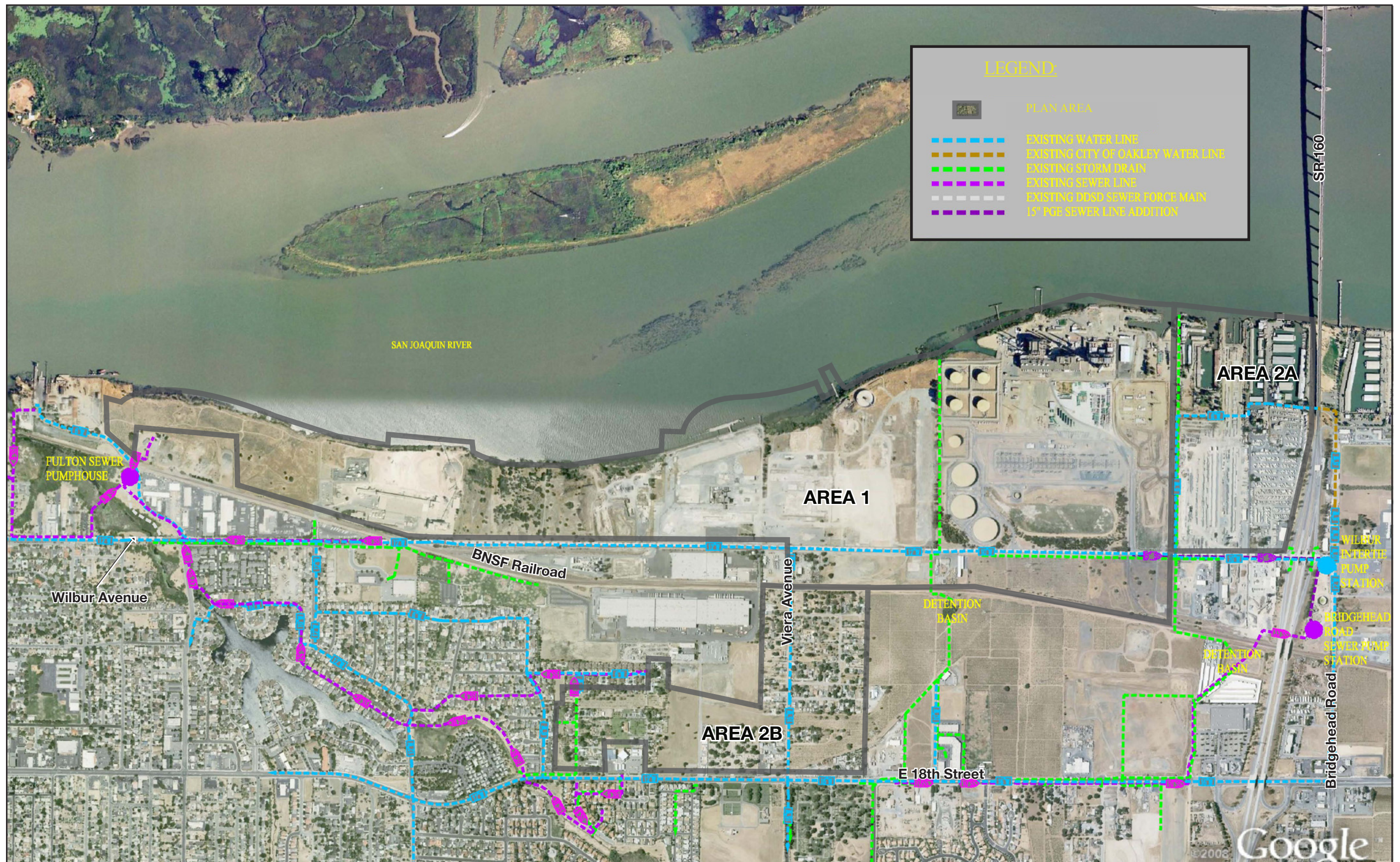




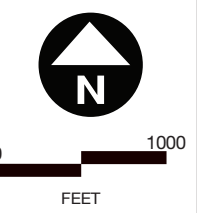
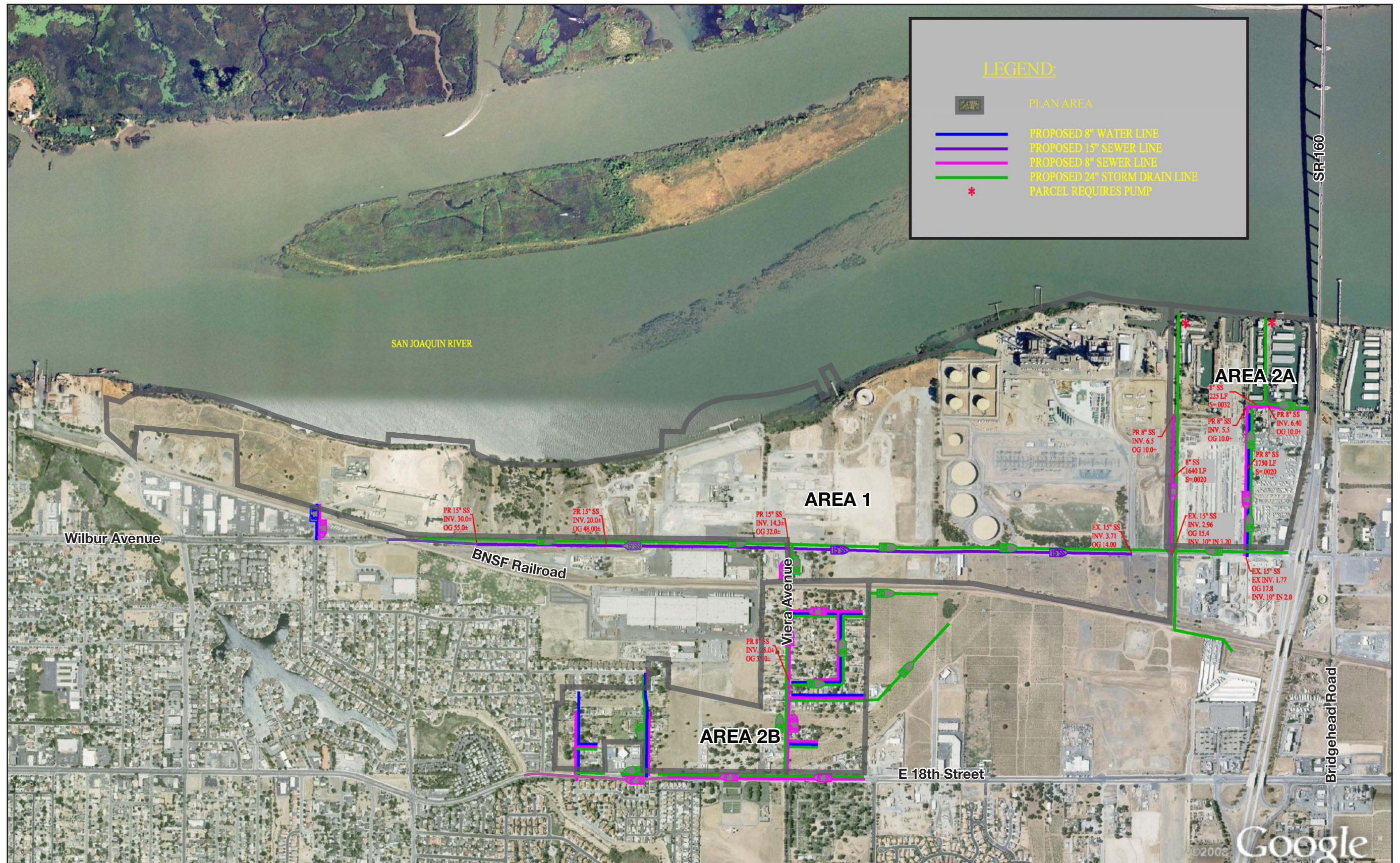








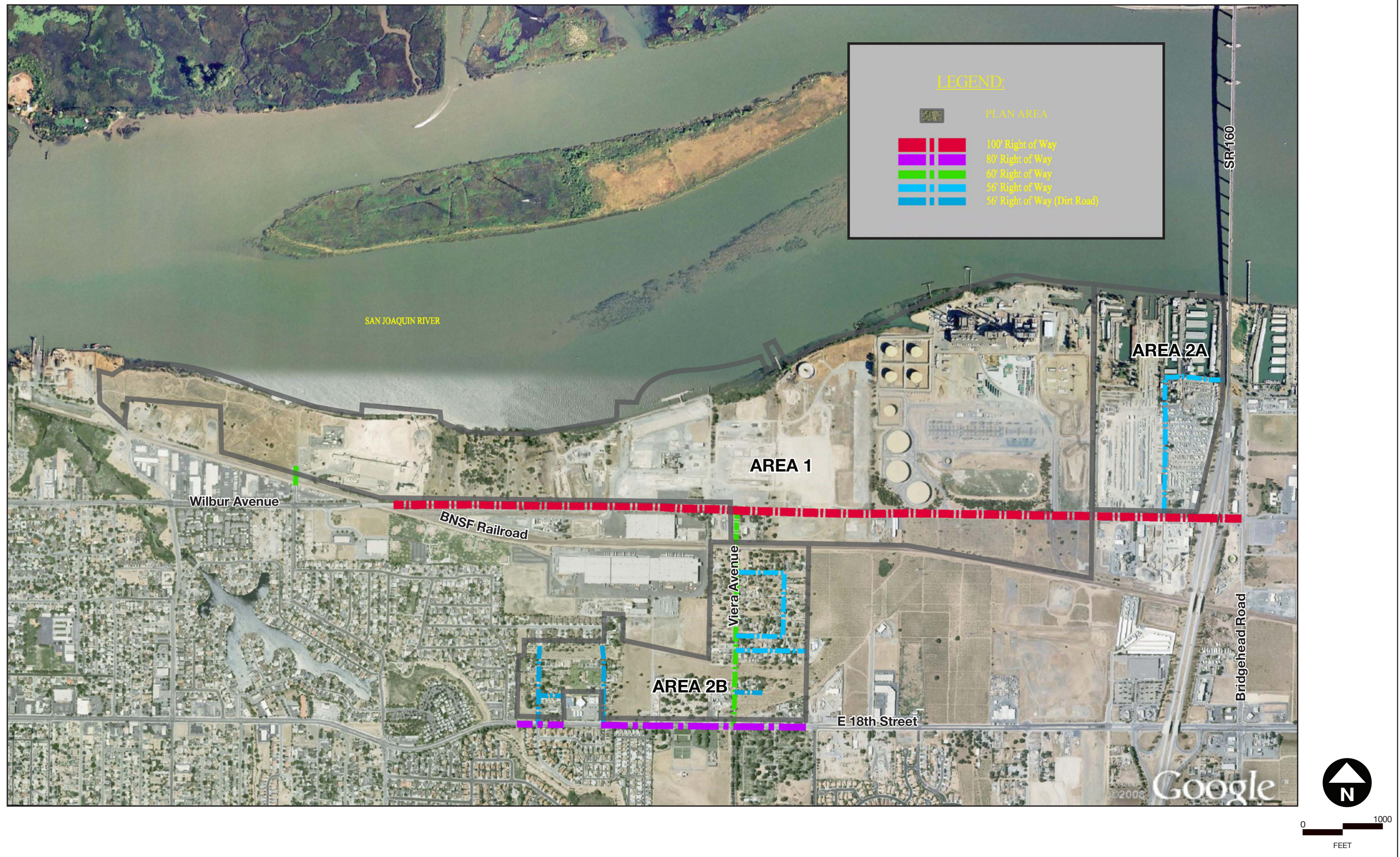




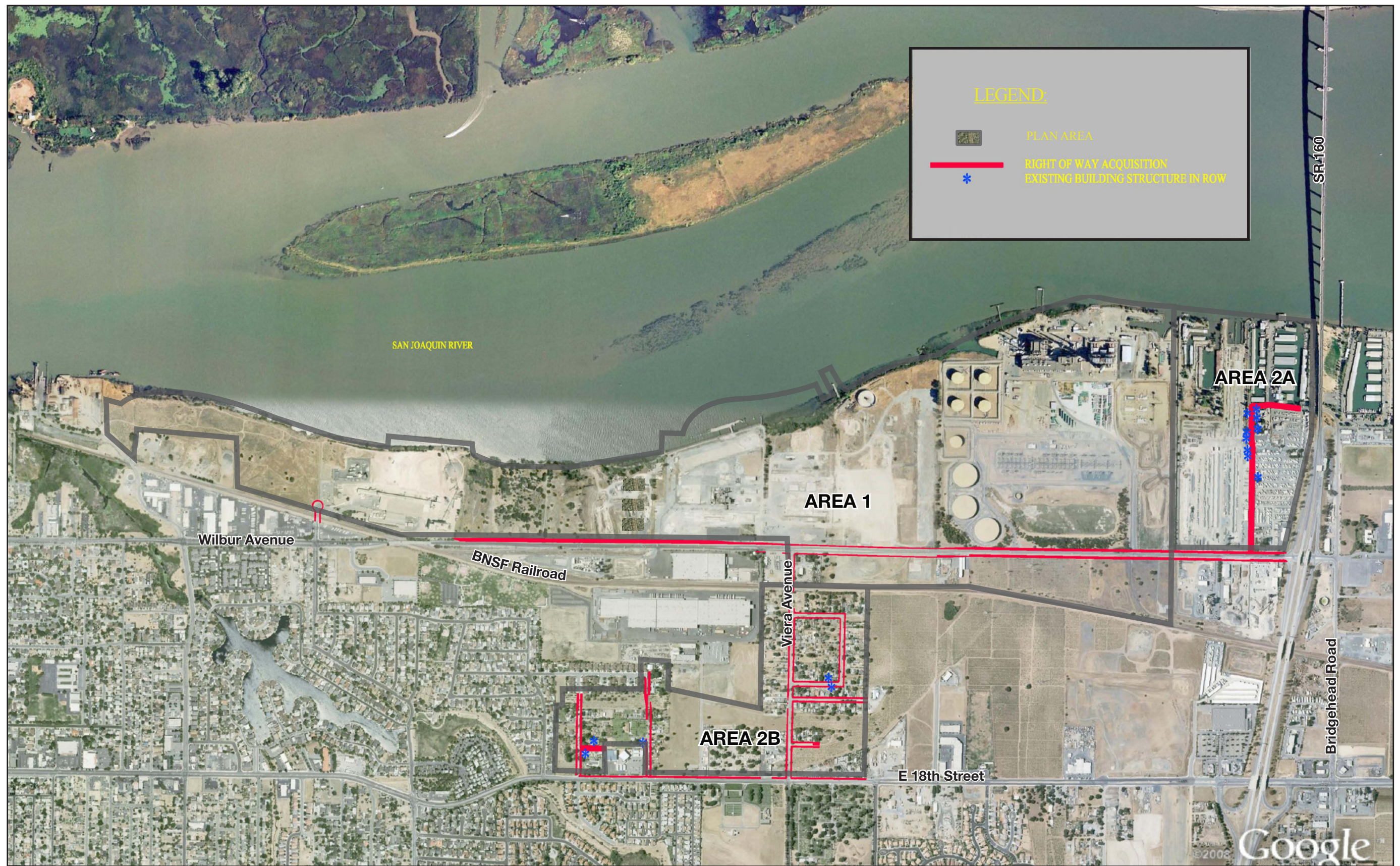








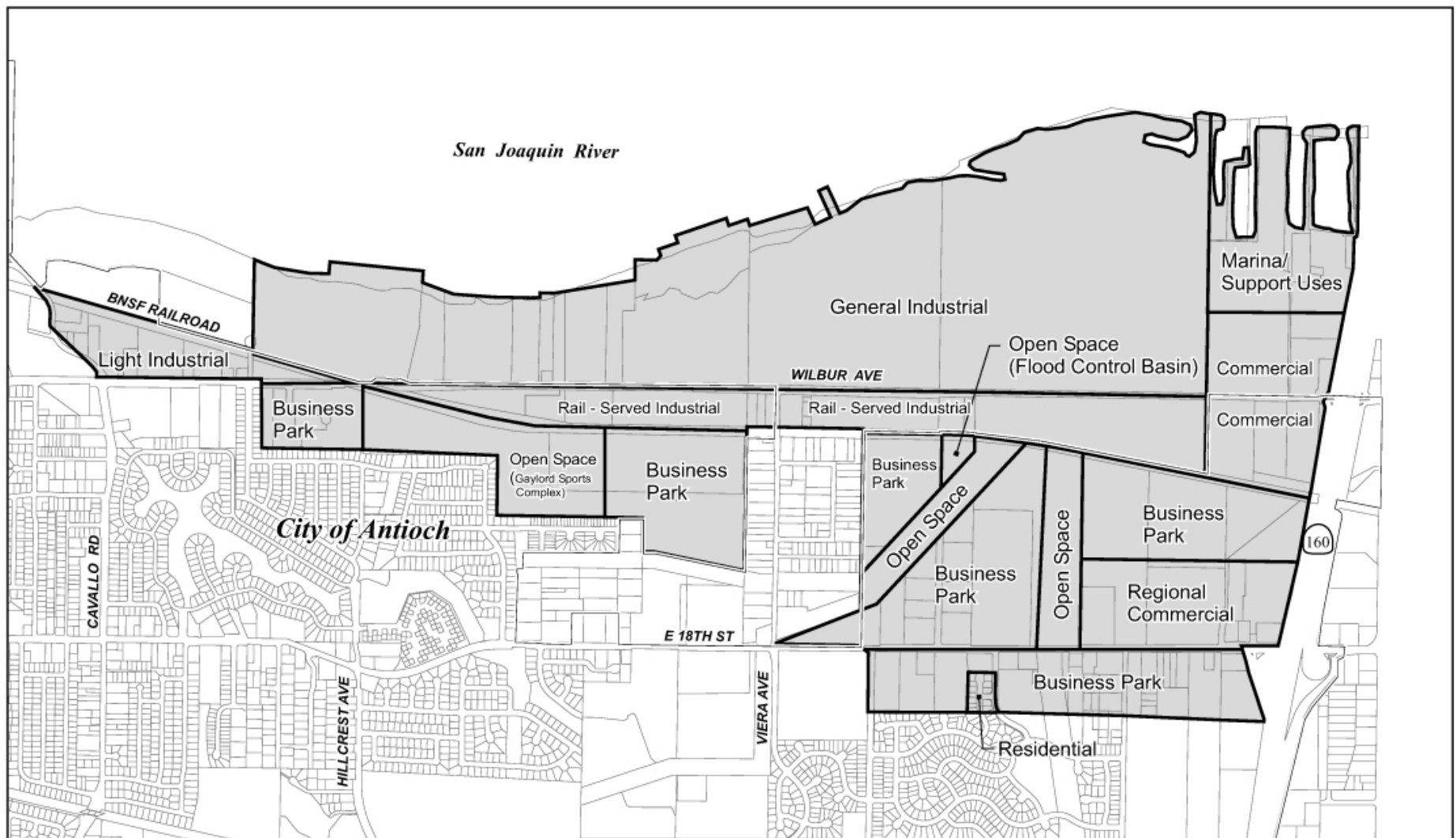












**LEGEND:**

- EMPLOYMENT FOCUS AREA
- ANTIOCH CITY LIMITS



# **Appendix A**

CEQA Guidelines Amendments.  
Appendix G – Environmental Checklist.





# APPENDIX A

## CEQA Guidelines Amendments

### Appendix G – Environmental Checklist

#### Effective March 18, 2010

This analysis incorporates the text changes to Appendix G of the CEQA Guidelines pursuant to the CEQA Guidelines Amendments (adopted December 2009), which formally take effect on March 18, 2010. This analysis incorporates the new checklist questions for Agricultural and Forestry Resources, Greenhouse Gas Emissions, and Transportation and Circulation. Changes to the environmental checklist since the January 2010 CEQA Guidelines are highlighted, with text additions shown in underline and text deletions shown in strikeout.

#### A-I Agricultural and Forestry Resources

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland) to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with existing zoning for agricultural use, or with a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) <u>Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?</u>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) <u>Result in the loss of forest land or conversion of forest land to non-forest use?</u>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use <u>or</u> conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland) to non-agricultural use?**

***No Impact.*** Please refer to **Section II. Agricultural Resources** for a discussion of the conversion of farmland.

**b) Conflict with existing zoning for agricultural use, or with a Williamson Act contract?**

***No Impact.*** Please refer to **Section II. Agricultural Resources** for a discussion of conflicts with existing zoning for agricultural use or a Williamson Act contract.

**c) Conflict with existing zoning for, or cause rezoning of, forest land, timberland, or timberland zoned Timberland Production?**

***No Impact.*** The project site is not zoned for forest land or timberland use, nor is it under a Williamson contract. The project would therefore not conflict with existing zoning for forest land, timberland, Timberland Production. No mitigation is required.

**d) Result in the loss of forest land or conversion of forest land to non-forest use?**

***No Impact.*** The project site does not contain any forest land and the project would not therefore cause forest land to be converted to non-forest use. No mitigation is required.

**e) Involve other changes in the existing environment which due to their location or nature, could individually or cumulatively result in loss of Farmland to non-agricultural use or conversion of forest land to non-forest use?**

***Less Than Significant Impact.*** Please refer to **Section II. Agricultural Resources** for a discussion of a loss in Farmland to non-agricultural use. The project site does not contain any forest land and so there would be no conversion of forest land to non-forest use.

## A-II Greenhouse Gas Emissions

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a) <u>Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?</u>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) <u>Conflict with any applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?</u>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

### a) **Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?**

***Potentially Significant Impact.*** The General Plan EIR (2003) considered the effects of build out of the project area as part of its programmatic analysis of growth throughout the city. The city envisions the project area as a job center, and defined a focus area called the “Eastern Employment Area”, which included land within the city as well as the unincorporated land contained in Area 1 and 2a (Figure 12). The General Plan and EIR designate properties within Area 2b as residential and open space uses according to the existing pattern of development.

The General Plan EIR analyzed the anticipated build out of the Eastern Employment Area according to a total of 13 million square feet (msf) of Business Park/Industrial development: approximately 7.1 msf in Areas 1 and 2a, and approximately 5.9 msf in the incorporated area south of the BNSF railroad.

However, while other sections of this analysis have relied upon the Final EIR for the General Plan, prepared in 2003, with regard to potential impacts associated with the project, the State of California, in 2003, did not require any analysis of greenhouse gas emissions for CEQA analysis. Therefore, the Final EIR for the General Plan did not analyze the potential greenhouse gas emissions that might be associated with development of the Eastern Employment Area (nor any other portion of the City or its sphere of influence).

The City acknowledges that the regulatory environment has changed considerably since 2003 with regard to greenhouse gases. Key legislative policy changes are discussed in greater detail in item “b”

below. While the project (the proposed reorganization) would not lead to any land use change and thus no change in greenhouse gas emissions above present levels, this environmental document is looking at the issue in a programmatic manner.

As of January 2010, the City of Antioch has embarked on the preparation of a City-wide climate action plan. The plan, expected to be completed by late 2010, is anticipated to comprise a series of policies and actions that would allow the city to meet GHG reduction targets in compliance with state regulations, including AB 32.

As the specific policies to be included in the climate action plan have yet to be established, this analysis seeks to quantify anticipated greenhouse gas emissions associated with development of the Eastern Employment Area and provide appropriate mitigation measures.

Greenhouse gas emissions have been quantified for the project area using the URBEMIS2007 air quality model. **Table A-II-1** shows the construction and annual greenhouse gas emissions associated with build out of Areas 1, 2a, and 2b based on the proposed General Plan designations shown in Figure 4. To be conservative, the assumed service population is based on an area average of 2.0 employees per 1,000 square feet of industrial development. (Using a higher population such as might be associated with office or other uses would result in a lower per capita rate of emissions.)

**Table A-II-1. Greenhouse Gas Emissions (in CO<sub>2</sub>e)**

<b>Construction Emissions</b>	<b>Annual Greenhouse Gas Emissions</b>	<b>Annual Emissions Per Service Population</b>
12,528 Metric Tons	67,825 Metric Tons/Year	4.69 Metric Tons/Year

Note: CO<sub>2</sub>e stands for CO<sub>2</sub> equivalent. Source: CirclePoint, 2010.

In its proposed draft CEQA Guidelines Update (2009), the Bay Area Air Quality Management District establishes project-level thresholds for greenhouse gas emissions. Development of business park/industrial land uses could generate greenhouse gas emissions from both mobile sources (primarily automobile and vehicular traffic to and from the site) as well as from stationary sources (such as industrial heating/cooling equipment, exhaust pipes, etc). For stationary sources, BAAQMD proposes a GHG emissions threshold of 10,000 metric tons of CO<sub>2</sub> equivalent gases per year. For projects other than stationary sources, BAAQMD proposes a tri-part threshold:

- \* compliance with a qualified climate action plan, or
- \* an emission level of 1,100 metric tons of CO<sub>2</sub> equivalent per year, or
- \* an emission level of 4.6 metric tons of CO<sub>2</sub> equivalent per year per service population (residents + employees).

As the City has no qualified climate action plan in place, the first threshold cannot be utilized for this project. As shown in **Table A-II-1**, the resulting GHG emissions from the potential build out of the project located in the Eastern Employment Area exceed BAAQMD's draft thresholds for

both stationary and non-stationary source projects set by BAAQMD, and also slightly exceeds the 4.6 metric tons of CO<sub>2</sub> equivalent per year per service population (residents + employees). This exceedance, at the programmatic level, is considered potentially significant.

**Mitigation Measure A-II-1:** All future discretionary applications for development within the project area must comply with one or both of the following requirements:

1. If the application is subject to CEQA, the CEQA analysis shall include an analysis of greenhouse gas impacts consistent with state, regional and local regulations in place at that time. This analysis would be expected to include a quantification of potential greenhouse gas emissions associated with a proposed action, a determination of significance and, if necessary, identification of emission reducing design elements pursuant to adopted guidance and emission reduction factors in effect at that time.
2. Upon the City's adoption of a Climate Action Plan, future project proponents shall demonstrate how their project(s) conform with the relevant goals, policies, and objectives of the Climate Action Plan

Implementation of **Mitigation Measure A-II-1** would ensure that no substantial increase in greenhouse gas emissions would occur within the project area, and that future development would comply with a qualified climate action plan. These actions would reduce the potentially significant impact of GHG emissions to a less than significant level. No further mitigation is required.

**b) Conflict with any applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?**

**No Impact.** The City of Antioch has not adopted any plans, policies or regulations for the purpose of reducing the emissions of greenhouse gases. Applicable legislation on reducing the emissions of greenhouse gases is at the state level and is summarized below:

State of California Executive Order S-3-05

In June 2005, the Governor of California signed Executive Order S-3-05, which identified CalEPA as the lead coordinating State agency for establishing climate change emission reduction targets in California. The "Climate Action Team", a group of state agencies, was set up to implement Executive Order S-3-05. Under this order, the State plans to reduce greenhouse gas emissions to 80 percent below 1990 levels by 2050. GHG emission reduction strategies and measures to reduce global warming were identified in the 2006 Climate Action Team Report.

Assembly Bill 32 - The California Global Warming Solutions Act of 2006

In 2006, the governor of California signed AB 32, the Global Warming Solutions Act, into law. The Act requires California to cap its greenhouse gas emissions at 1990 levels by 2020. This legislation requires the California Air Resources Board (CARB) to establish a program for statewide GHG

emissions reporting, and monitoring/enforcement of that program. CARB recently published a list of discrete GHG emission reduction measures that can be implemented immediately. CARB was also required to adopt rules and regulations to achieve the maximum technologically feasible and cost-effective GHG emission reductions. CARB's Early Action Plan identified regulations and measures that could be implemented in the near future to reduce GHG emissions.

Many of the measures to reduce GHG emissions from transportation will come from CARB. AB 1493, the Pavley Bill, directed CARB to adopt regulations to reduce emissions from new passenger vehicles. CARB's AB32 Early Action Plan released in 2007 included a strengthening of the Pavley regulation for 2017 and included a commitment to develop a low carbon fuel standard (LCFS). Current projections indicate that with implementation of a strengthened Pavley Regulation, including LCFS, California will still fall short of the 1990 level targets for transportation emission reductions. Under the Bush Administration, the U.S. EPA blocked California's efforts to implement an LCFS, however, the Obama Administration has directed the U.S. EPA to reconsider its action. Nonetheless, the earlier U.S. EPA action and pending legal challenges by the automotive industry could continue to delay California's efforts to achieve emission reduction targets.

CARB is targeting other sources of emissions. The main measures to reduce GHG emissions will be contained in the AB32 Scoping Plan. A draft of that plan was released in June 2008 and was approved by CARB in December 2008. This plan includes a range of GHG reduction actions. Central to the draft plan is a cap and trade program covering 85 percent of the state's emissions. This program will be developed in conjunction with the Western Climate Initiative, comprised of seven states and three Canadian provinces, to create a regional carbon market. The plan also proposes that utilities produce a third of their energy from renewable sources such as wind, solar and geothermal, and proposes to expand and strengthen existing energy efficiency programs, such as building and appliance standards. The plan also includes full implementation of the Pavley standards to provide a wide range of less polluting and more efficient cars and trucks to consumers who will save on operating costs through reduced fuel use. The plan also calls for development and implementation of the Low Carbon Fuel Standard, which would require oil companies to make cleaner, domestically produced fuels. The regulatory process begins in 2009 to implement the plan. The details in regulating emissions and developing targeted fees to administer the program would be developed through this process. This would last two years and measures must be enacted by 2012.

#### Senate Bill 375 - California's Regional Transportation and Land Use Planning Efforts

California enacted legislation (SB 375) to expand the efforts of AB 32 by controlling indirect GHG emissions. SB 375 would develop emission-reduction goals around which regions could apply to planning activities. SB 375 provides incentives, such as transportation funding, for local governments and developers to implement new conscientiously planned growth patterns. This includes incentives for creating attractive, walkable and sustainable communities and revitalizing existing communities. The legislation also allows developers to bypass certain environmental reviews under CEQA if they build projects consistent with the new sustainable community strategies.

Development of more alternative transportation options that would reduce vehicle trips and miles traveled, along with traffic congestion, would be encouraged. SB 375 enhances CARB's ability to reach the AB 32 goals by directing the agency to develop regional GHG emission reduction targets to be achieved from the transportation sector for 2020 and 2035. CARB would work with the metropolitan planning organizations (e.g., ABAG and MTC) to align their regional transportation, housing and land use plans to reduce vehicle miles travelled and demonstrate the region's ability to attain its GHG reduction targets.

The proposed project would not directly generate greenhouse gas emissions since the project is comprised of procedural actions and does not involve any new construction or development. Current land uses and traffic patterns on the project site would not change under the proposed project and there would be no generation of greenhouse gases relative to existing conditions. Implementation of Mitigation Measure AQ-1 would ensure that any future development proposed for the project area complies with all pertinent legislative requirements pertinent to greenhouse gas emissions. No actual development could proceed until such conformance is demonstrated. Therefore the project would not conflict with AB 32, SB 375, and Executive Order S-3-05 and no impact would occur.

As of January 2010, the Bay Area Air Quality Management District (BAAQMD) is revising its CEQA Guidelines to provide its member agencies with specific recommendations and guidance in determining the significance of greenhouse gas emissions and identifying emission reducing project design elements. The City further anticipates that these new guidelines will include clear direction to cities and project proponents on how individual development proposals can avoid or minimize the production of new greenhouse gas emissions. The City anticipates BAAQMD will adopt these new CEQA Guidelines in 2010.

### A-III Traffic and Transportation

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project: <sup>1</sup>				
a) <del>Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)</del> <u>Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?</u>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) <del>Exceed, either individually or cumulatively, a</del> <u>Conflict with an applicable congestion management project, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?</u>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

<sup>1</sup> The transportation and traffic analysis is consistent with the December 2009 CEQA Guidelines, Appendix G, which take effect March 18, 2010.



	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
<del>f) Result in inadequate parking capacity?</del>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<del>fg) Conflict with adopted policies, plans or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities supporting alternative transportation (e.g. bus turnouts, bicycle racks)?</del>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highway and freeways, pedestrian and bicycle paths, and mass transit?**

and

**b) Conflict with an applicable congestion management program, including but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?**

**No Impact.** The city utilizes level of service standards to evaluate the performance of the circulation system. Although the project could potentially extend roads and infrastructure to Areas 1, 2a, and 2b, the project would not induce population growth or result in any change to the existing uses on the project site. No increase in traffic would result from implementation of the proposed project since the project consists of a series of procedural actions. Any future construction or development in Areas 1, 2a, and 2b would be subject to separate environmental review. The project would not adversely affect level of service standards and would not conflict with any applicable city plan, ordinance, or policy. No mitigation is required.

**c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?**

**No Impact.** The project site is not located within an airport land use plan. The closest public use airports to the project site are Byron Airport and Buchanan Field. Byron Airport is located about 14.5 miles to the southeast; Buchanan Field is about 15 miles to the west. Owing to this distance, implementation of the project would have no impact on air traffic patterns. No mitigation is required.

**d) Substantially increase hazards to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?**

***Less Than Significant Impact.*** The proposed project consists of a series of procedural actions. These include the imposition of City of Antioch street standards on all public roadways in the project area. At present, many existing roadways in the project area lack improvements such as pavement, crosswalks, sidewalks, and similar features that reduce transportation hazards. Over the long term, as properties within the project area are developed, the City would impose improvements to the public rights of way as conditions of approval to comply with the City of Antioch street standards in effect at that time. Therefore, the project would have a long term beneficial impact with regard to design hazards; for the purposes of this evaluation, the project is assumed to have a less than significant impact. No mitigation is required.

**e) Result in inadequate emergency access?**

***No Impact.*** The project site is currently under the jurisdiction of the Contra Costa County Fire Prevention District (CCCFPD), which serves extensive areas within Contra Costa County. Implementation of the proposed project would not change the existing emergency access to the site since the proposed project consists of a series of procedural actions. Over the long term, as properties within the project area are developed, the City would conduct separate environmental review and would require any new development to comply with City and CCCFPD emergency access standards. However, the project would not introduce any new construction or development that would alter existing conditions, and therefore would result in no impact to emergency access. No mitigation is required.

**f) Conflict with adopted policies, plans or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?**

***Less Than Significant Impact.*** The proposed project consists of a series of procedural actions. These include the imposition of City of Antioch alternative transportation standards on all public roadways in the project area. At present, many existing roadways in the project area lack improvements such as bus turnouts for public bus routes. Over the long term, as properties within the project area are developed, the City would impose improvements to the public rights of way as conditions of approval to adhere to the City of Antioch alternative transportation standards in effect at that time. Therefore, the project would have a long term beneficial impact with regard to compliance with alternative transportation plans; for the purposes of this evaluation, the project is assumed to have a less than significant impact. No mitigation is required.

## **Appendix B**

Northeast Antioch Annexation Feasibility Study:  
Strategic Plan for Phased Annexation



# NORTHEAST ANTIOCH ANNEXATION FEASIBILITY STUDY

## *Strategic Plan for Phased Annexation*

*January 2005  
(as amended July 18, 2005)*

*Prepared for:*

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

**RICHARD T. LOEWKE, AICP**  
URBAN & ENVIRONMENTAL PLANNING

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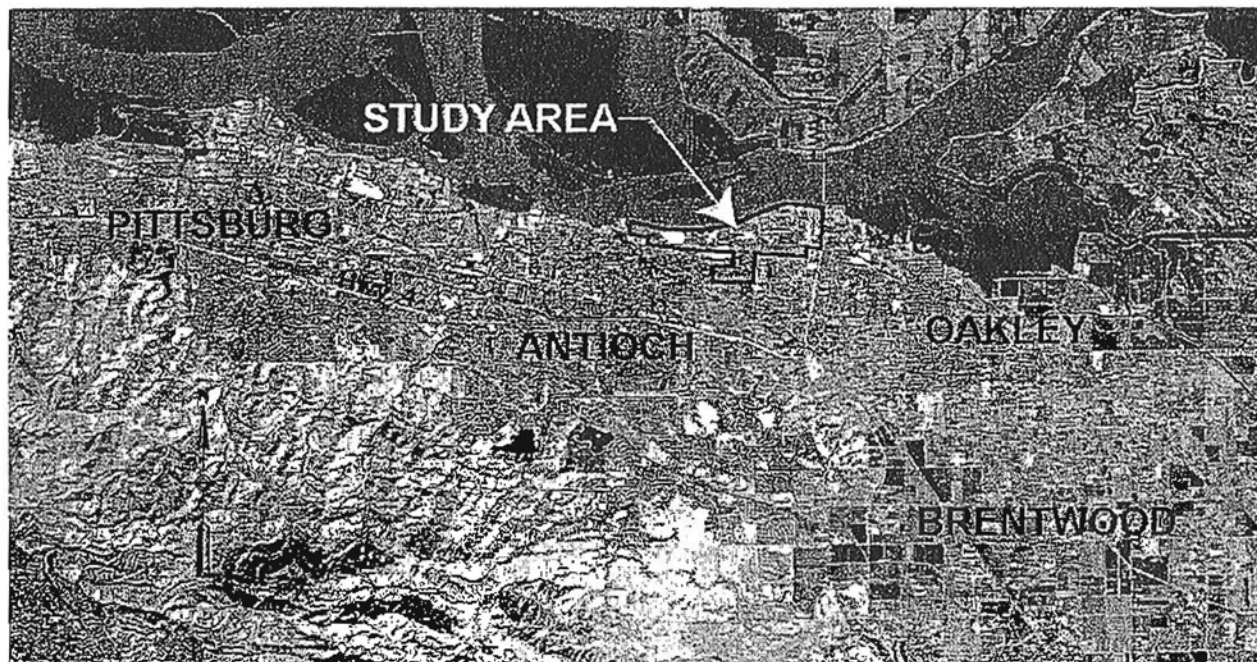
# Northeast Antioch Annexation Feasibility Study

## *Strategic Plan for Phased Annexation*

### 1. Introduction

Over the past several years, the City of Antioch has received interest from private companies for expansion of existing industrial plants, or development of entirely new facilities within the currently unincorporated area north of the Wilbur Avenue / Burlington Northern Railroad corridor. This interest has precipitated a number of questions about the scope of potential development within this area, as well as the timing and ability of the City to coordinate the delivery of services to future projects. In order to establish a cohesive long-term economic development strategy for this area, the City's General Plan calls for a closer examination of available land resources, current uses and possible municipal service requirements. The remaining unincorporated area which is the subject of this study (shown in Figure 1.1) is situated along the San Joaquin River, immediately west of Highway 160 within Antioch's Sphere of Influence.

Figure 1-1: Location Map

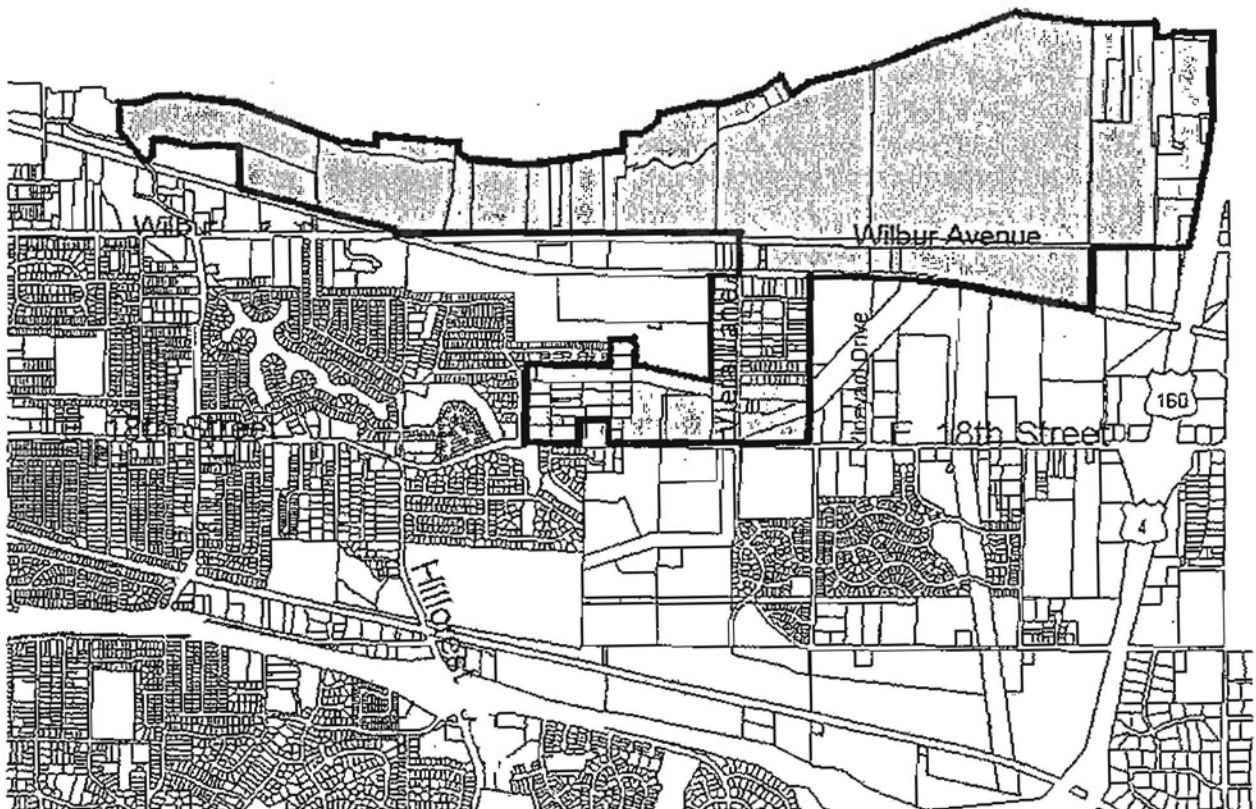


An initial report was prepared in March of 2003 providing a summary of existing land uses, available land resources, the current public and private utility services and infrastructure within the Study Area, and the regulatory context to be considered in addressing the possible future annexation of this area.

Based on an assessment of current City General Plan land use and development policy, the initial report outlined three preliminary options for annexation of the 600+ acre study area (shown in Figure 1-2). The first option contemplated a phased annexation of two groupings of industrial properties located at the eastern end of the Planning Area, initially identified as containing fewer than 12 registered voters (defined as legally uninhabited), followed by the balance of the Study Area (including approximately 100 residences) at a later date.

The second option separated the Study Area into a northerly (primarily industrial) annexation area, and a southerly (primarily residential) area. This second option contemplated concurrent processing of both areas, with the northerly portion structured as a land owner-supported annexation, while the southerly portion would be processed as a registered voter-supported annexation.

Figure 1-2: Study Area Boundary



The initial report was presented to the City Council in April of 2003. Based on review of the technical information in the report and testimony from affected land owners and residents within the entire Study Area, Council directed that additional research be carried out to answer a number of remaining questions. This current study was initiated by the consultant with support from City engineering staff late in 2003 to investigate the following key issues:

- (1) **Documentation of Registered Voters:** Verify the number and location of registered voters within the study area through current information from the County Registrar of Voters and by conducting a follow-up field verification.
- (2) **Verification of Procedural Requirements with LAFCO:** Based on registered voter information, explore with the LAFCO executive officer the validity of processing concurrent applications for legally inhabited and uninhabited annexations.
- (3) **Configuration of Annexation Boundaries:** Using the foregoing updated information, develop refined boundaries for the legally inhabited and uninhabited annexation areas, and discuss implications of special requirements outlined by LAFCO staff.
- (4) **Adequacy of Existing Infrastructure:** Based on the final boundary configurations, investigate options and recommend a level of service for potable water, roadway, sewer, storm drainage and related infrastructure to serve each of the areas. Identify capital costs for contemplated improvements and discuss relative timing and funding options.
- (5) **Fiscal Impact of Extending Municipal Services:** Investigate the anticipated cost of providing City services to the area, including revenues and expenditures based on current City Finance Department methodology. Develop forecast of net fiscal impacts based on development and tax sharing assumptions.
- (6) **Assessment of Potential Environmental Impacts:** Provide an updated preliminary assessment of potential environmental effects associated with implementation of the annexation program, and discuss application processing implications.

Chapter 2 of this report presents a current summary of registered voters and assessed valuations for properties within the Study Area. Based on analysis of Contra Costa LAFCO policy and applicable requirements under State Law, Chapter 2 identifies three distinct Annexation Areas, and describes the steps to be followed in processing applications. Finally, an assessment of future development potential is included in Chapter 2 for use in analyzing future service needs and costs.

Chapter 3 provides a detailed assessment of capital facility needs for each of the three Annexation Areas, based on current City standards and minimum service levels required to facilitate development of remaining vacant and underutilized properties. An evaluation was conducted in cooperation with the City's Engineering Division to determine the critical timing needs and estimated costs of each utility system within each of the three Annexation Areas.

The findings of a preliminary fiscal impact analysis are presented in Chapter 4. The analysis was prepared using the existing land use inventory and future development assumptions presented in Chapters 1, 2 and 3. The fiscal analysis takes into consideration the geographic scale of, and diversity of services to be provided within, the three Annexation Areas. It also assesses the range of public facilities to be maintained by the City following annexation, and explores the implications of potential future residential and non-residential development. Chapter 4 relies upon a set of defined assumptions to quantify and compare projected City service expenditures and revenues on an annual basis, immediately following annexation and at full build-out of each of the Annexation Areas. However, since no development projects are currently contemplated, the particular property tax increment and sales tax potentials for future land uses within the three Annexation Areas are not well-defined. Consequently the analysis presents range of potential revenues which have been calculated based on alternative assumptions.

Chapter 5 provides a preliminary assessment of potential environmental impacts associated with implementation of the contemplated phased annexation program. Because no defined physical development projects have been contemplated as part of this feasibility study, a preliminary evaluation of environmental effects has been prepared at a programmatic level. As discussed in this report, future infrastructure improvements will be linked to possible development of vacant or underutilized properties. The report recommends that a complete Initial Study be prepared, should the City decide to proceed with implementation of the annexation program. As noted in Chapter 5, the Initial Study will likely call for the preparation of a Mitigated Negative Declaration to address potential effects of the program. In addition, the report identifies the need for separate project-level environmental impact assessments in conjunction with each such future project or subsequently proposed improvement.

The major conclusions regarding opportunities and constraints associated with annexation of the three defined Areas are summarized in Chapter 6. This concluding section of the report describes the next steps to be followed, should the City determine that it wishes to proceed with annexation.

## **1.1 Summary of Initial Report Findings**

Figure 1-2 identifies the boundary of the Study Area. An inventory of existing land uses within the Study Area was completed in 2003, and updated for this current report. As shown in Table 1-1, nearly 40% of the 678 total acres are fully developed and occupied by industrial or commercial uses. These include a power generation facility with its ancillary fuel storage tanks (Mirant), a container fabrication plant (Gaylord Container Corp.), a gypsum plant (Domtar Gypsum America) smaller manufacturing facilities and warehousing uses. Both the Gaylord and Mirant sites contain a substantial supply of remaining undeveloped or underutilized land, potentially available for future development. Nearly all of these uses are located along the Wilbur Avenue corridor.



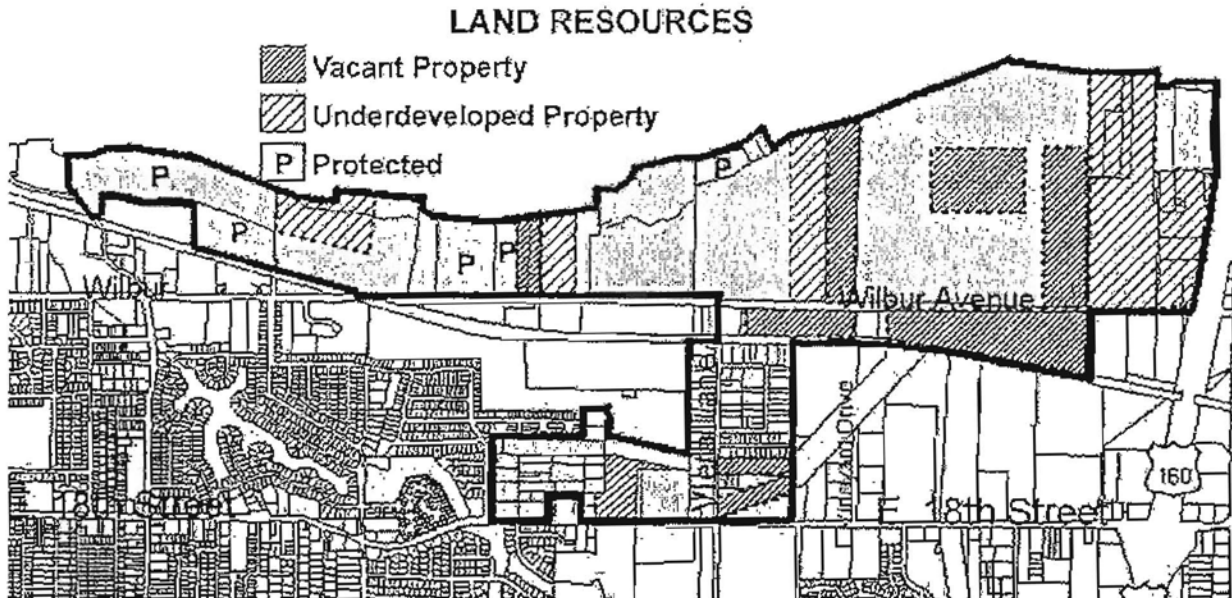
An additional 11% of the total land resources within this Study Area are committed to existing residential uses. The unincorporated residential neighborhood located north of East 18<sup>th</sup> Street, along and westerly of Viera Avenue and along Trembath Lane / Lipton Street, includes 74 acres of improved residential properties, consisting primarily of older single-family homes. Also located within this neighborhood north of East 18<sup>th</sup> Street are the Holly Cross Cemetery (8.27 acres), a small commercial use fronting on East 18<sup>th</sup> Street (0.92 acres), a total of approximately 18.5 acres of PG&E right-of-way, a vacant 8.0-acre parcel owned by the Gaylord Container Corporation, and a total of approximately 2 acres of vacant residential properties.

**Table 1-1: Existing Land Use Summary**

Land Use	Total Acres	Percentage	Description
Industrial & Commercial (fully developed)	266	39.2	Container, gypsum, and power plants, along with and other uses north of Wilbur Ave and railroad line; cemetery north of E. 18 <sup>th</sup> Street.
Residential (fully developed)	74	10.9	Neighborhoods along Viera Ave. & north of E. 18 <sup>th</sup> Street, currently served by private water wells and septic systems.
Underdeveloped Non-Residential	137	20.2	Open storage or inactive unenclosed uses, potentially suitable for development subject to clearing of site and delivery of services.
Vacant Non-Residential	103	15.2	Undeveloped or cleared property with limited outdoor storage (including unused portions of larger parcels), potentially suitable subject to delivery of services.
Vacant Residential	2	0.3	Scattered lots located within two neighborhoods north of E. 18 <sup>th</sup> Street; water and sewer services lacking.
Protected Dunes	77	11.4	Antioch Dunes National Wildlife Preserve; property owned by Federal Government.
OS/Outside ULL	19	2.8	Includes portions of properties along waterfront, owned by Federal and State Governments and private companies.
<b>Total:</b>	<b>678</b>	<b>100.0</b>	<b>Approximate Total for Study Area.</b>

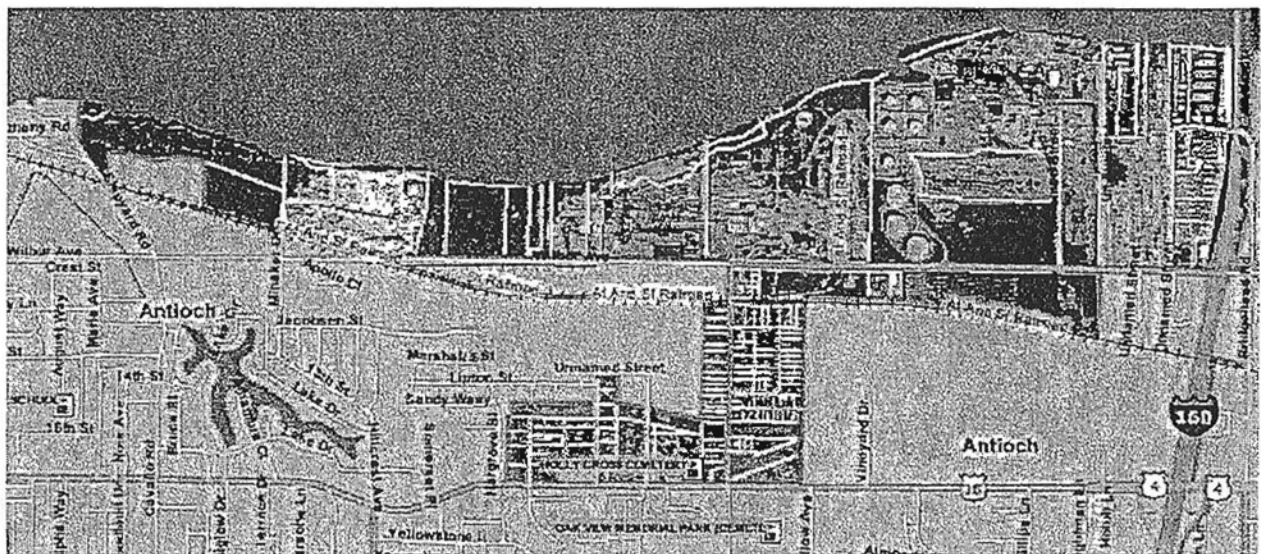
Figure 1-3 shows the distribution of remaining vacant and underutilized non-residential properties within the Study Area. The vast majority (250 acres) of these properties are located along the Wilbur Avenue corridor, within the northerly portion of the Study Area.

Figure 1-3: Vacant and Underdeveloped Properties



The pattern of existing land uses within the Study Area is visible in Figure 1-4 below. In addition to the vacant and underutilized non-residential properties identified in Figure 1-3, additional protected natural habitat areas north of Wilbur Avenue are visible in the aerial view.

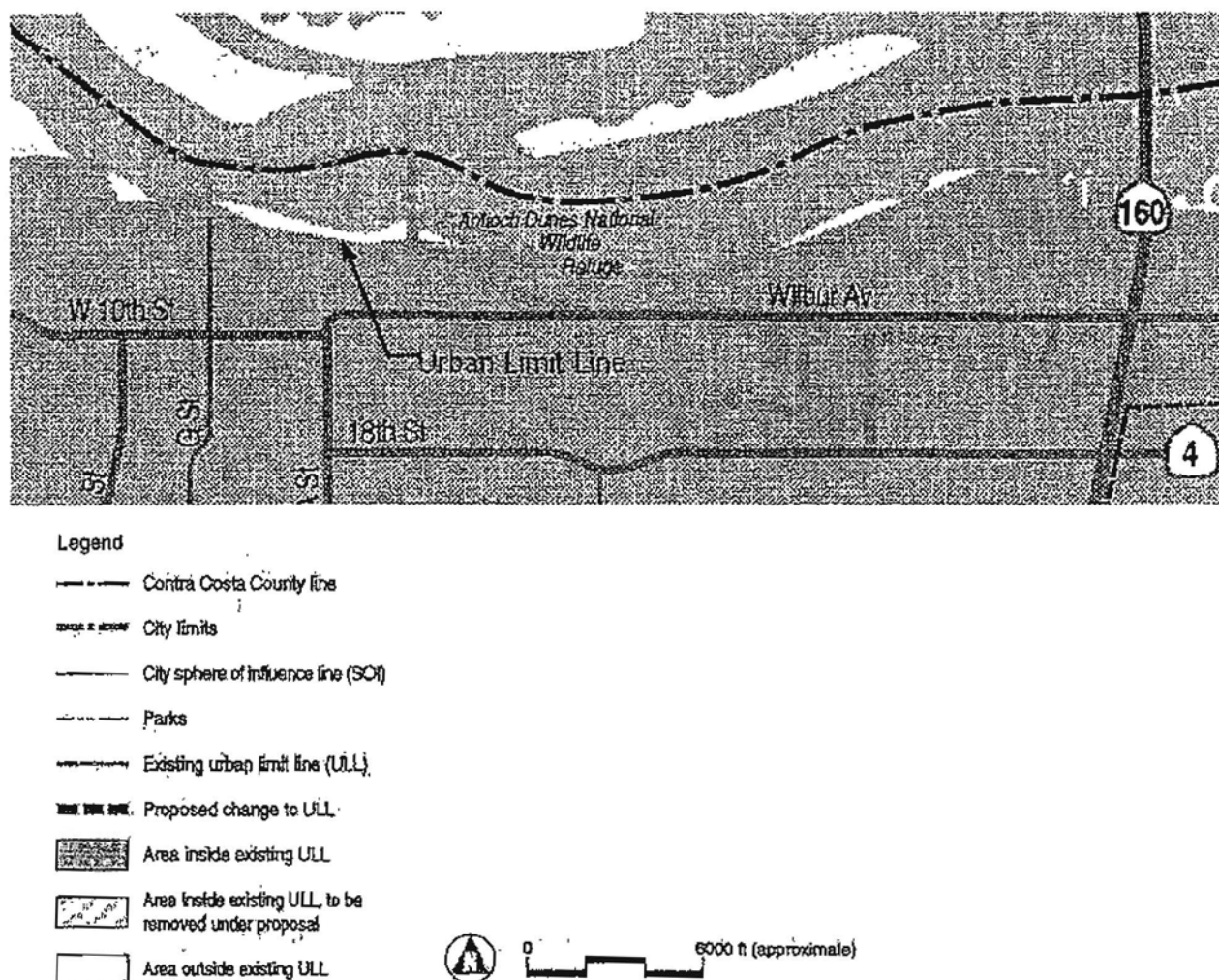
Figure 1-4: Aerial View of Study Area Properties



The Antioch Dunes National Wildlife Refuge (shown as “protected” in Figure 1-3) is habitat under management by the U.S. Fish & Wildlife Service for several endangered or threatened insects and plants, and represents an important consideration for planning of nearby industrial facilities. Two property groupings, as shown in Figures 1-3 and 1-5, comprise the 77 acres of protected dunes, owned by the Federal Government.

Urban development is strongly discouraged outside the Contra Costa County Urban Limit Line. Affected are portions of the Antioch Dunes, as well as portions of State and privately-owned parcels along the frontage of the San Joaquin River, as shown in Figure 1-5.

Figure 1-5: Properties Excluded from ULL



Source: Contra Costa County Draft EIR for Modifications to Urban Limit Line (April 2000)



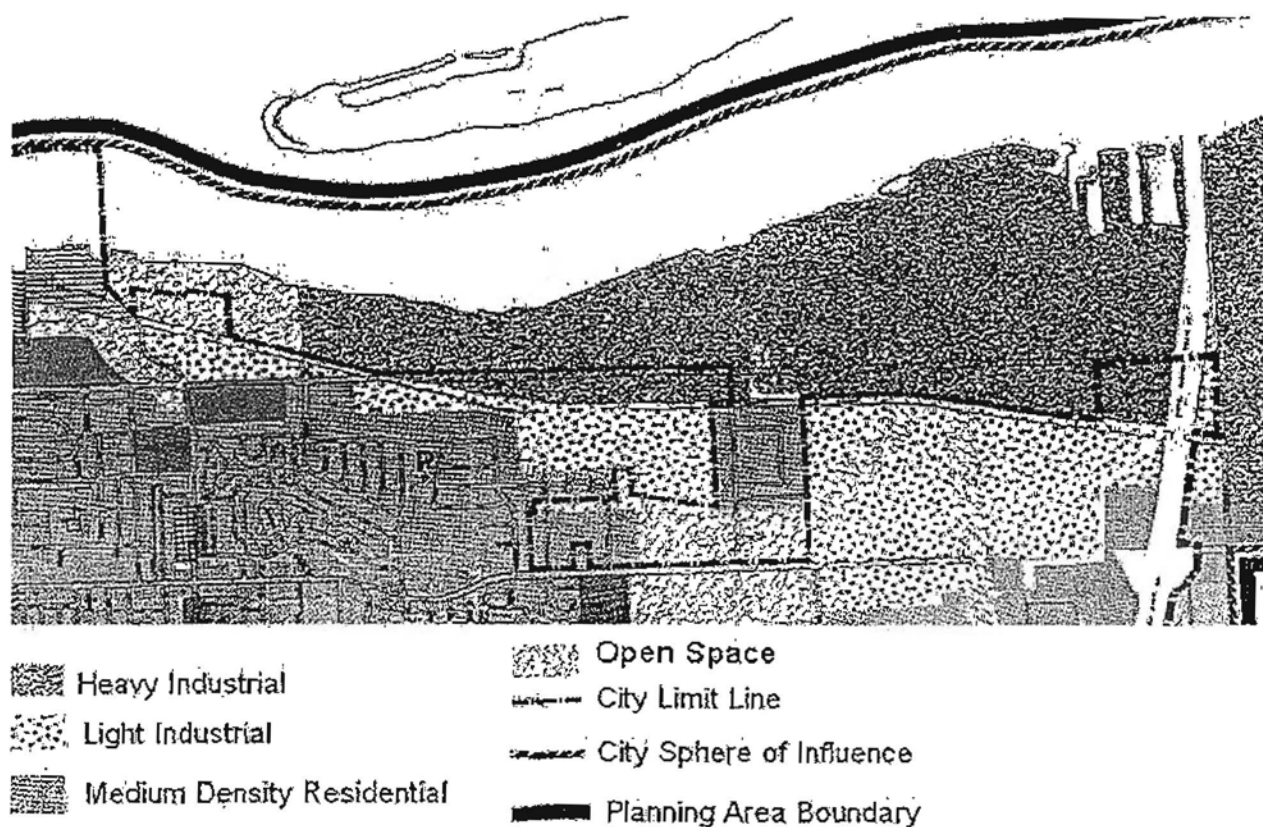
Figure 1-6 shows a representative portion of the Antioch Dunes National Wildlife Refuge discussed above.

**Figure 1-6: Protected Federally-Owned Lands**



As shown in Figure 1-7, all developed and remaining vacant or underutilized non-residential properties within the northerly portion of the study area are classified in the City's General Plan for Heavy Industrial use. The existing residential neighborhoods north of East 18<sup>th</sup> Street are classified as Medium Density Residential, and the remaining 16 acres of vacant lands north of East 18<sup>th</sup> Street are classified partially as Medium Density Residential and Open Space on the General Plan Land Use Map.

Figure 1-7: Antioch General Plan Land Uses



Overall, this report shows that the Study Area may be annexed as part of a three-phase approach in which Areas 1, 2a and 2b are processed as separate but concurrent applications. As discussed in Chapter 2, since concurrent annexation is required to the Delta Diablo Sanitary District (DDSD), the applications will be processed as integrated Boundary Reorganizations. Should the City elect to proceed with the Boundary Reorganizations, all three applications would be City initiated. However, approval by LAFCO of Area 1 would be subject to the support by a majority of property ownership interests, whereas Areas 2a and 2b would ultimately be subject to support by a majority of the registered voters.

Based on the alternative assumptions as discussed in Chapter 4, the fiscal analysis shows that the City is likely to see revenues for Annexation Area 1 which are either slightly above or below expenditures in the initial year following annexation ("base year"). The Area 1 revenues will exceed service costs by the time the area builds out; however the extent of the surplus will be influenced by several factors, including potential sales tax revenues and employee service costs.

Annexation Area 2a is projected to show a small initial net City deficit, which is projected to converted into a net surplus at the time of build-out. The size of this surplus, however, will vary based on the future growth in sales tax revenues and other related factors as discussed in Chapter 4. The predominantly residential Annexation Area 2b is expected to require greater City expenditures than revenues in the initial year following annexation, and this deficit is expected to grow over time as the cost of services increase.

In aggregate, the City will experience an initial net fiscal deficit following annexation. This deficit is likely to be reduced as development takes place; however whether or not a net surplus occurs by the time the Study Area as a whole builds out will be influenced by such variables as growth in retail sales and the financial burden on municipal services from a growing daytime population.

## **2. Analysis of Annexation Phasing**

This study focuses on 165 parcels which comprise a total of roughly 678 acres located within the unincorporated Sphere of Influence outside of, but contiguous to the Antioch City boundaries. This "Study Area" includes existing industrial facilities and residences, as well as vacant and under-utilized acreage which may be suitable for future development. The purpose of the study is to identify the range of opportunities and constraints associated with potential annexation of part or all of the Study Area. This section of this report provides the updated background information to be used in evaluation of a phased future annexation program, including the delineation of three Annexation Areas, identification of current land uses within these Areas, and a preliminary estimate of available land resources for future development. Other relevant information presented in this chapter includes a current inventory of registered voters and assessed valuation of parcels, by Annexation Area, and an estimate of future development potentials.

### **2.1 Identification of Phasing Options**

As shown in Figure 1-2 above, the 678-acre Study Area is located west of State Route 160 and north of East 18<sup>th</sup> Street. The Area adjoins the San Joaquin River to the north, and the City of Oakley Planning Area to the east. All Study Area properties are directly or indirectly accessible from Wilbur Avenue or East 18<sup>th</sup> Street, both of which have freeway access to State Route 160. These properties are entirely within the City's Sphere of Influence, and form a contiguous boundary with the current City Limit Line. As documented in the EIR prepared by Contra Costa County for amendments to the County Urban Limit Line (ULL) in April of 2000, all but a very small portion of these properties are also inside the adopted ULL. The only areas placed outside the ULL include small portions of the Antioch Dunes National Wildlife Refuge and small portions of other parcels adjoining the San Joaquin River. These excluded properties are depicted in Figure 1-5.

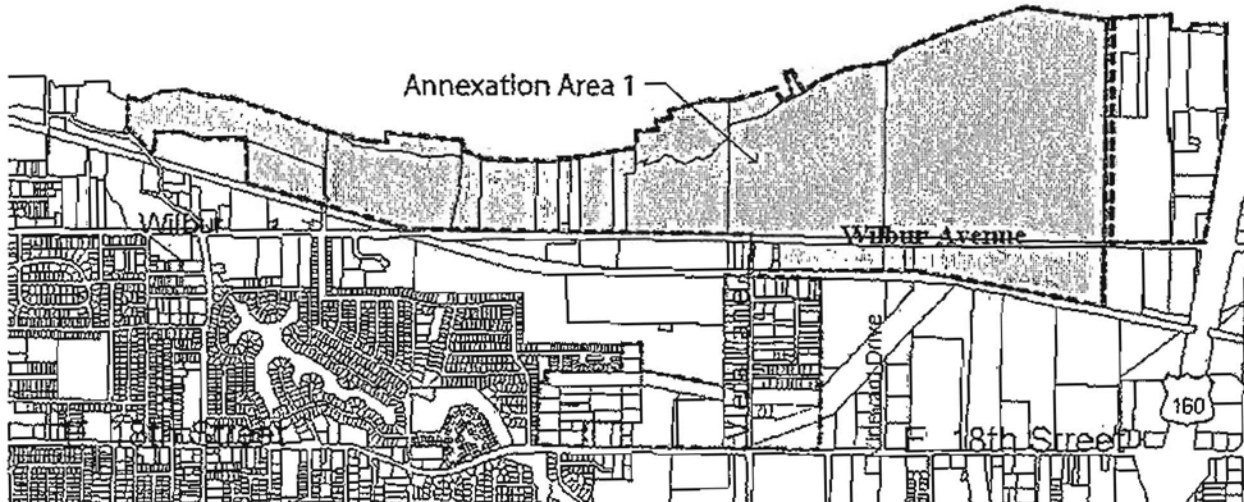
A portion of the Study Area also adjoins the East 18<sup>th</sup> Street Planning Area, for which a specific plan and environmental analysis were completed and adopted by the Antioch City Council in 2001. The East 18<sup>th</sup> Street Specific Plan identifies a set of office, commercial and light industrial uses on properties located north of East 18<sup>th</sup> Street, south and east of the Study Area. The adopted specific plan encourages annexation of approximately 14 acres at the northeast corner of Viera Avenue and East 18<sup>th</sup> Street, consisting of four single-family residences, along other vacant properties classified under the Plan for light industrial use.

Contra Costa LAFCO policies and applicable provisions of the Cortese-Knox-Hertzberg Local Government Reorganization Act (as discussed in Section 2.6) require that local government annexations and boundary reorganizations be processed differently, depending on whether the affected territory includes 11 or fewer (a legally uninhabited territory) or 12 or more registered voters (legally inhabited). Based on updated documentation from the County Registrar of Voters, as verified in the field and discussed with the LAFCO executive officer,

the boundaries of three separate “Annexation Areas” have been delineated. As shown in Figure 2-1 below, Annexation Area 1 includes the unincorporated industrial area along Wilbur Avenue, from the power plant to the west. As further detailed in Sections 2.3 and 2.5 below, this 481-acre area includes no registered voters, but contains over 150 acres of vacant or underdeveloped industrial lands, suitable for future development.

Figure 2-1: Annexation Area 1

## Northeast Antioch Annexation Area 1



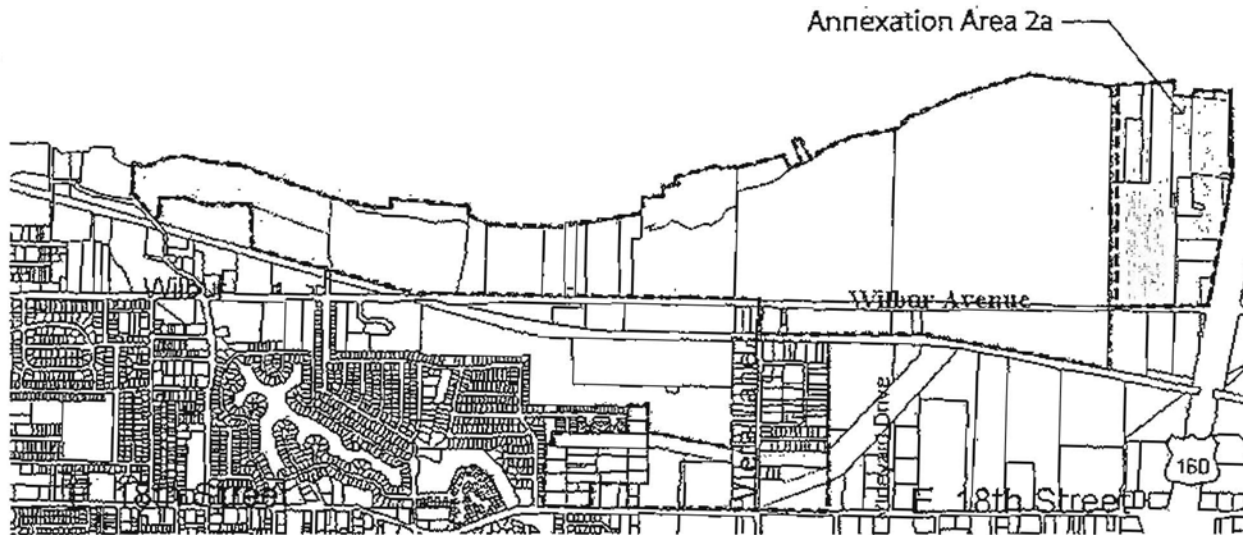
The remaining industrial and commercial lands north of Wilbur Avenue and east of the power plant have been grouped into Annexation Area 2a. Despite the intensity of existing non-residential land uses, records show the presence of 31 registered voters within Area 2a. The land use analysis shows that up to 76 of the 94 acres within Area 2a may be suitable for long-term redevelopment.

As shown in Figure 2-2, Area 2a adjoins Area 1 on the west, and the existing City boundary on the south. Figure 2-6 shows a portion of the under-developed property within Area 2a. Given its immediate freeway access to Highway 160 from on Wilbur Avenue, proximity to utility extensions (as discussed in Chapter 3), this area may be well-suited to further development subject to annexation and delivery of services.



Figure 2-2: Annexation Area 2a

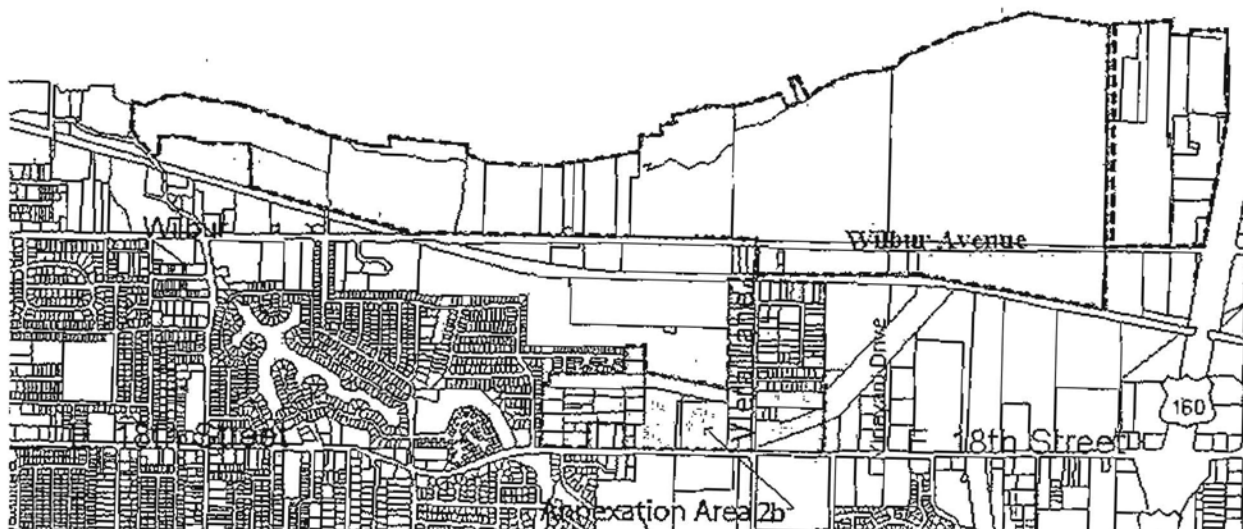
## Northeast Antioch Annexation Area 2a



The third Annexation Area comprises the remaining 103 acres of land north of East 18<sup>th</sup> Street and south of Wilbur Avenue. Current records show a total of 138 registered voters residing within residential neighborhoods along Viera Avenue and Trembath / Lipton Lanes.

Figure 2-3: Annexation Area 2b

## Northeast Antioch Annexation Area 2b

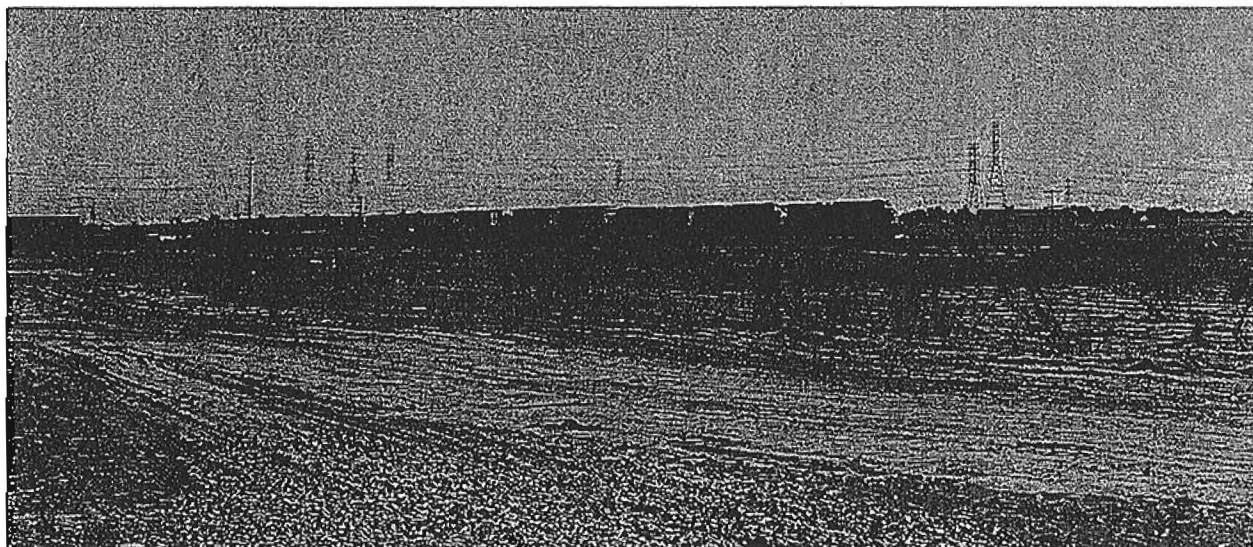


## 2.2 Land Resources

This section summarizes the existing development and available land resources within the three Annexation Areas shown in Figures 2-1, 2-2 and 2-3. According to State law and local LAFCO policy, Area 1 could be processed as an independent property owner-controlled annexation, with the decision on annexation of Areas 2a and 2b controlled by a majority of the registered voters present. It is possible that the entire Study Area could annex together, or that land owners within the uninhabited area would support annexation, while voters within one or both of the inhabited areas might elect not to annex. The analysis of land resources and all subsequent evaluation of development potential and service needs has therefore been segregated by Annexation Area, in order to independently assess the implications of these various scenarios.

As summarized in Table 2-1 below, Area 1 includes 234 developed non-residential acres, along with 87 vacant and 64 underdeveloped non-residential acres. An additional 77 acres in Area 1 are protected habitat areas, and 19 acres are outside the County Urban Limit Line. No residential properties and no developed or available residential properties exist within the 481-acres of Area 1. Figure 2-4 is representative of the vacant industrial lands along the Wilbur Avenue corridor available for development in Area 1, subject to the delivery of services.

**Figure 2-4: Vacant Land South of Wilbur Avenue, Area 1**

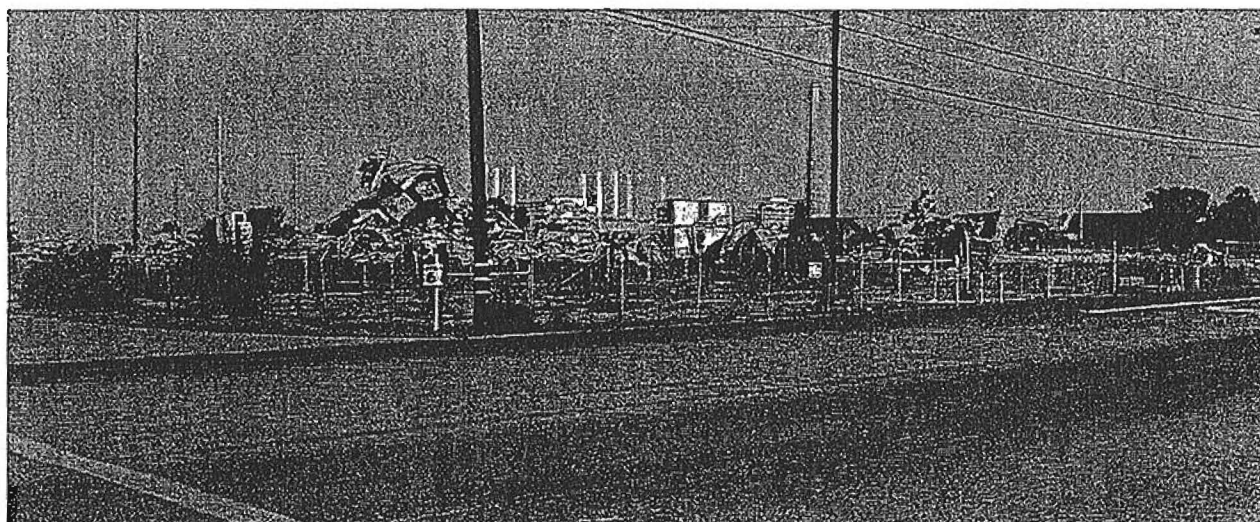


**Table 2-1: Existing Land Uses, by Annexation Area**

	Area 1	Area 2a	Area 2b	Total
Developed Non-Residential	234	18	14	266
Vacant Non-Residential	87	0	16	103
Under-Developed Non-Res.	64	73	0	137
Developed Residential	0	3	71	74
Undeveloped Residential	0	0	2	2
Protected Lands	77	0	0	77
Outside ULL	19	0	0	19
<b>Total</b>	<b>481</b>	<b>94</b>	<b>103</b>	<b>678</b>

Figure 2-5 shows the condition of partially demolished industrial buildings on property north of Wilbur Avenue in Area 1, classified in this study as “underdeveloped”. This site could be made available for future industrial development, subject to completion of site clearing and utility delivery as discussed in Chapter 3.

**Figure 2-5: Underutilized Land North of Wilbur Avenue, Area 1**

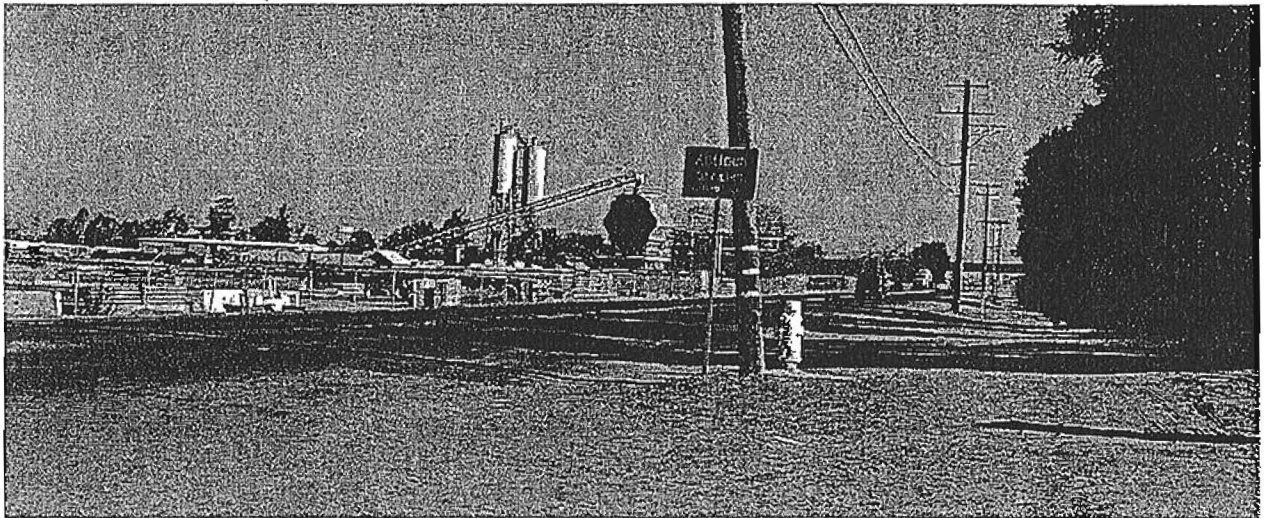


As reflected in Table 2-1, Area 2a includes 18 fully developed non-residential acres, along with 73 acres currently utilized by open storage or unenclosed building materials construction operations. Given the potential for further development on property occupied by these low-intensity uses, they have been classified as “underdeveloped”. Residential uses currently occupy 3 of the 94 acres within Area 2a. Residents living in permanent structures, in the marina compound and in mobile homes collectively account for a total of 31 registered voters.



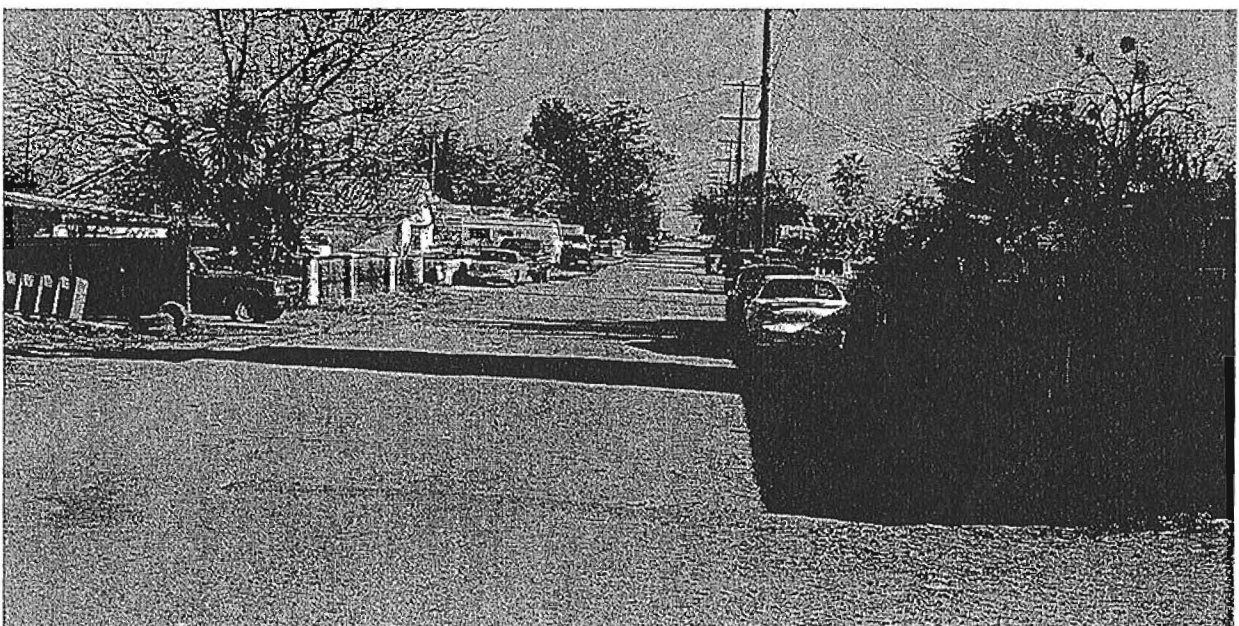
Figure 2-6 provides an example of a currently operating building materials fabrication facility and storage yard classified as underdeveloped in this land use analysis.

**Figure 2-6: Underutilized Land North of Wilbur Avenue In Area 2a**



Area 2b includes 71 developed residential acres and 14 acres of developed non-residential uses. Only 16 acres of vacant non-residential lands exist within the 103-acre Area. Figure 2-7 below is reflective of the older residential properties within the area, located on narrow streets and served predominantly by private wells and septic systems.

**Figure 2-7: Improved Residential Properties in Area 2b Along Vine Lane**



### 2.3. Registered Voters

A combined 74 acres within the Study Area (just under 11% of the total area) are currently developed with residential uses. As reflected in Table 2-1 above, 71 of these residential acres are situated in Area 2b, with the remaining 3 acres in Area 2a. As shown in Table 2-2, these uses account for a total of 169 registered voters within the Planning Area as a whole, and make Areas 2a and 2b voter-controlled annexations.

The physical separation of Areas 2a and 2b (see Figures 2-2 and 2-3) have prompted LAFCO staff to identify these as separate legally inhabited annexation "areas" which must be addressed in separate processing proposals. Where such an inhabited annexation results in a registered voter protest of 25-50%, an election is required to determine the outcome. Protests or elections in which more than 50% of the registered voters oppose the annexation result in a termination of proceedings, according to State law.

The annexation of legally uninhabited Area 1 is controlled by support from a majority of the record owners who also represent a majority of the assessed valuation. Assessed values are discussed in Section 2.4 below.

**Table 2-2: Registered Voters, by Annexation Area**

	Area 1	Area 2a	Area 2b	Total
Registered Voters	0	31	138	169

Source: Contra Costa County Registrar of Voters, January 10, 2005

### 2.4. Assessed Valuations

Current records from the Contra Costa County Assessor are reflected in Table 2-3. As noted above, the current assessed values within inhabited Areas 2a and 2b are not pertinent to the process of confirming an annexation. The relationship between current valuations and development potential, is significant to the relationship between municipal service costs and revenues, however, as discussed in Chapter 4. Since Area 1 is uninhabited, annexation of this area is determined by the support of by those property owners in control of a majority of the \$116+ million in assessed value.

**Table 2-3: Assessed Values, by Annexation Area**

	Area 1	Area 2a	Area 2b	Total
Total Assessed Values	116,684,792	8,869,849	10,037,262	141,591,903

Source: Contra Costa County Assessors Office, January 10, 2005

## 2.5. Future Development Assumptions

Following is a summary of the parcel configurations and status of improvements within the study area, broken down by Annexation Area. Current employment levels within the Study Area are estimated based on land use type and assessed valuation of improvements. As noted, future non-residential development is estimated on the basis of a floor area ratio of 0.3. Employment estimates are conservatively estimated on the basis of one employee per 2,000 square feet of future building area. These estimates are preliminary, and have been conservatively determined as a basis for estimating future revenues and municipal expenditures for delivery of services.

**Table 2-4: Study Area Statistical Summary**

	Annexation Areas			
	Area 1	Area 2A	Area 2B	Total Area
Number of Parcels	30	18	117	165
Total Acreage	480.78	94.05	103.1	677.93
Developable Non-Res. Acres <sup>1</sup>	151	76	16	243
# Residential Parcels	0	2	103	105
Potential Future Res. Units <sup>2</sup>	0	0	4	4
# Non-Res. Parcels	30	16	14	60
Future Non-Res. Const. <sup>3</sup>	1,973,268	993,168	209,088	3,175,524
Residential AV	0	159,325	13,526,361	13,685,686
Non-Residential AV	116,684,792	8,710,524	2,510,901	127,906,217
Total Assessed Valuation	116,684,792	8,869,849	16,037,262	141,591,903
Base Property Tax Revenue	1,143,196	88,698	160,372	1,392,266
Est. Current Employment	247	75	12	334
Future Employment Added	987	497	105	1,589
Registered Voters <sup>4</sup>	0	31	138	169
Classification	Uninhabited	Inhabited	Inhabited	-

<sup>1</sup> Please see Appendix B for a complete inventory of individual parcel ownership and valuation data. All figures are approximate, based on preliminary information and subject to verification.

<sup>2</sup> Based on vacant parcels classified in Antioch General Plan for single-family uses.

<sup>3</sup> Square footage based on total developable (vacant and underutilized) acreage assumed to develop under ultimate buildout conditions at an FAR of 0.3.

<sup>4</sup> Registered voter information is preliminary, calculated on the basis of Registrar of Voters Records as of January 10, 2005.

The foregoing assumptions lead to the potential for up to approximately 1,600 additional employees within the Study Area as a whole. Roughly two-thirds of this added employment is assumed to occur within Area 1 (987 new jobs) where a potential for up to an additional 2 million square feet of industrial building is assumed to exist. An additional 500 jobs are also possible from development of almost 1 million additional square feet of industrial buildings on 76 currently underdeveloped acres in Area 2a. New development within Area 2b would be limited to the 16 vacant non-residential acres located north of East 18<sup>th</sup> Street, accounting for up to approximately 100 new jobs.

## **2.6. Procedural Requirements**

The City of Antioch has recently updated its General Plan. The General Plan provides land use policy to guide future development within the Study Area. Although advisory with respect to land use entitlements granted by Contra Costa County for projects within the unincorporated area, the City's General Plan provides a mandatory framework for discretionary land use decisions upon annexation. The Antioch General Plan currently classifies properties within the Study Area for Heavy Industrial, Open Space or Medium-Low Density Residential (maximum 6 units per acre) use. As shown in Figure 1-7, these Land Use Classifications correspond generally to the existing land uses. As discussed below, future pre-zoning for the Study Area must be consistent with the General Plan.

The configuration and processing of annexations are regulated pursuant to both Division 3 of the California Government Code (Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000, as amended), and local Contra Costa County Local Agency Formation Commission (LAFCO) policies. The available choices for phasing of annexation are limited based on the unique configuration and mix of both residential and industrial uses within the approximate 678-acre study area. The three Annexation Areas may be processed as separate but concurrent proposals. It is possible that Area 1 could be approved, based on support from property owners (as discussed above), with the fate of Areas 2a and 2b separately determined by the respective groups of registered voters.

Municipal annexation will require concurrent annexation into the Delta Diablo Sanitary District (DDSD) accomplished through a boundary reorganization, as provided for under Government Code §56072 and §56375. This would provide treatment services for the additional effluent collected by the City within the selected annexation area. According to Government Code §56857, the reorganization proceeding would need to be filed jointly by both agencies, with the City of Antioch serving as the lead agency.

Properties within the Study Area are currently situated within the boundaries of the Contra Costa Water District (CCWD), the Antioch Unified School District (AUSD) and the Consolidated Fire District (CFD). Annexation would result in police, general administrative functions, parks, maintenance, planning, building and public works services transferring from Contra Costa County to the City of Antioch, with sewer treatment services being provided by DDWD.

As summarized in our initial report, extension of sanitary sewers to residential properties within Area 2b would help to mitigate for the ongoing contamination of ground water supplies brought about through concentrated use of private septic systems over many years.

Reorganization applications must be accompanied by lead agency plans for the delivery of services within the affected areas. Such service plans must be consistent with the City's general and specific plans. Where an initial study and Negative Declaration or EIR are required pursuant to the California Environmental Quality Act (CEQA - see Chapter 5 below), the service plan may be incorporated into the Initial Study. The ability of DDSD to provide treatment services for effluent collected by the City within the area must be verified by a "will serve" letter, evaluated in the Initial Study, and submitted as part of the application process. Antioch, however, has a capacity reservation in place with the District to address future needs.

Prior to placing a completed application for reorganization on an agenda for action by LAFCO, the Executive Officer must confirm that an applicable tax sharing agreement between the City and Contra Costa County is in place. Although Antioch has an existing master tax sharing agreement with the County, preliminary indications are that this project will require a separate negotiation with the County Administrator's office. As further discussed in Chapter 4, this is due to the fact that assessed valuations for each of the primary options exceed the \$10 million threshold set in the master agreement.

The Contra Costa LAFCO Executive Officer has been consulted to determine the applicability of LAFCO policies, and to review the history of similar annexations over the past several years. In particular, there appears to be precedent in Contra Costa County for concurrent processing of contiguous inhabited and uninhabited annexations, where the final outcome is determined jointly by owners of properties in the uninhabited area, as well as the registered voters in the inhabited area. As noted above, it is therefore possible that Area 1 (and possibly 2a) could be annexed, with the remaining predominantly residential land in Area 2b remaining under County jurisdiction and without sanitary sewer service.



### 3. Public Infrastructure

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The City of Antioch is the primary service provider to be affected by any potential annexation; DDSO would be impacted to a lesser extent. This Chapter provides a detailed assessment of capital facility needs for each of the three Annexation Areas, based on current City standards and minimum service levels required to facilitate development of remaining vacant and underutilized properties. An evaluation was conducted in cooperation with the City's Engineering Division to determine the critical timing needs and estimated costs of each utility system within each of the three Annexation Areas.

#### 3.1. Summary of Servicing Options and Recommendations

The need for municipal infrastructure facilities is primarily a function of demand from new development, but is also influenced by the condition of private wells and septic systems within Annexation Area 2b as discussed above. It is possible to complete annexation and to defer extension of major infrastructure improvements, until such time as engineering designs and estimates have been completed, and a funding mechanism has been approved. The residential portion of the study area (Area 2b) consists primarily of older single-family residences, without any significant vacant or underdeveloped land resources for further development. Consequently, the cost of capital facility improvements, if made, would be borne either by current City resources, or a local improvement district (requiring landowner approval). Potential land resources within this area are limited to two property groupings on the north side of East 18<sup>th</sup> Street: (a) Roughly 8 vacant acres west of Viera Avenue (owned by Gaylord); and (b) 8 acres of underutilized property located east of Viera Avenue within the East 18<sup>th</sup> Street Specific Plan Area. Both Annexation Areas 1 and 2a include a substantial supply of potentially developable land. Future development on the remaining available sites identified in Table 2-4 could fund the cost of sanitary sewer, water supply and roadway improvements within these areas.

Table 3-1 provides a summary of all new capital facilities needed within the three Annexation Areas. These facilities have been grouped according to improvement type (e.g. sewer, storm drain, water, roadway etc.), and evaluated as to their timing needs, estimated costs and potential sources of funding. Improvements were identified as "critical" (in the case of water in Area 2b) where a public health risk was identified. Otherwise, improvements were classified as "long term" where needed to support planned future development, or "optional" where considered to improve the service to existing developed areas.

Similarly, the potential funding for all identified improvements were classified as coming from one of three sources. These included the "City of Antioch", for critical improvements where a development source could not concurrently be identified (subject to possible reimbursement from benefiting land owners); "developers" where an available land resource suitable for future development was dependent on the facilities; and "property owners" where non-critical facilities were identified to improve service to developed properties. The estimated costs of these facilities are summarized below.

### **3.2 Sanitary Sewer Facilities**

The City of Antioch currently maintains trunk lines within Wilbur Avenue and East 18<sup>th</sup> Street. New sanitary sewer facilities would be needed within the industrial portions of the Annexation Areas 1 and 2a, in order to support further economic development efforts in these areas. A primary sewer service line would be located within Wilbur Avenue. Additional localized improvements would also be needed to support light industrial development of the 16 acres within Area 2b. In addition to these development induced facilities, new sanitary sewer services may be desirable to serve the existing residential neighborhoods in Area 2b.

According to preliminary cost estimates prepared by the City's Engineering Division (summarized in Table 3-1 and detailed in Appendix A), just over \$1.2 million in sewer costs have been identified to serve potential new development within Areas 1 and 2a together, and roughly an additional \$800,000 in improvements would be needed to service the two residential neighborhoods north of East 18<sup>th</sup> Street (currently on septic systems).

### **3.3 Storm Drainage Facilities**

New public storm drainage facilities identified in this study include: (a) a trunk line in Fleming Lane to service future Area 2a development, estimated at roughly \$600,000; and (b) optional retrofit efforts within the residential neighborhoods of Area 2b, having a combined cost of estimated at approximately \$1.2 million.

### **3.4 Treated Water Facilities**

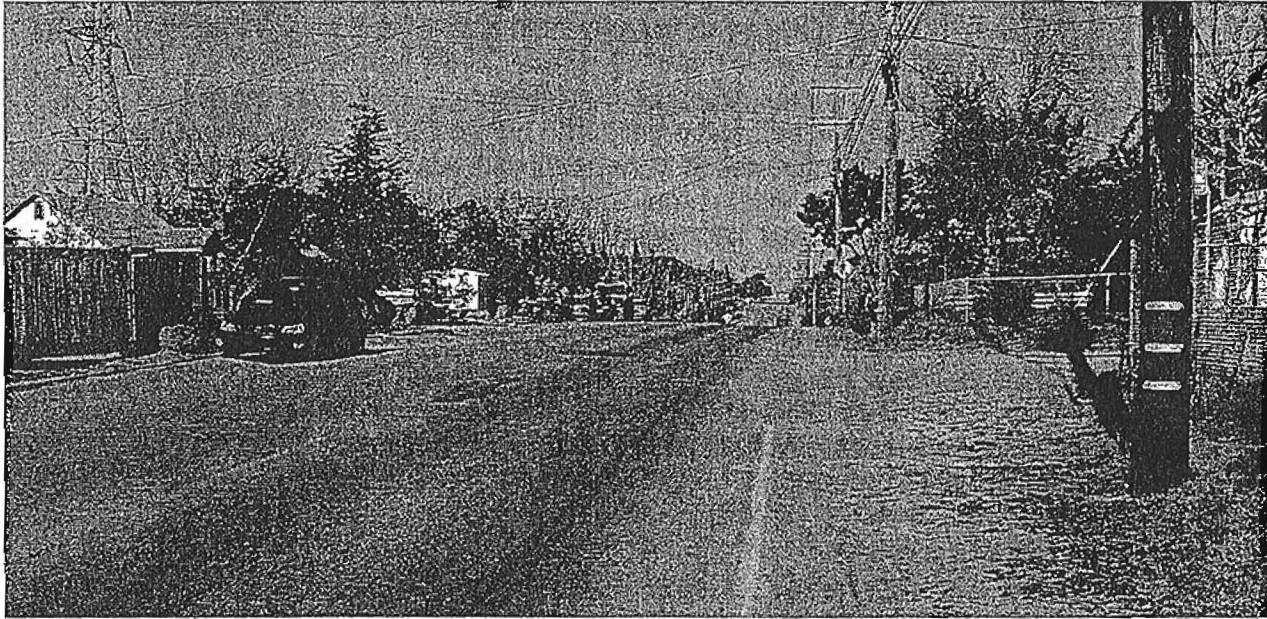
Area 1 is currently served by as treated water main, and would not require additional major capital facilities. Area 2a would need \$200,000 in new facilities to serve future development. The cost of "critically" needed water system improvements within Area 2b is estimated at just over \$600,000. As noted above, these local residential supply lines are important to replace well water drawn from shallow depth in proximity to operating septic systems.

### **3.5 Roadway and Related Improvements**

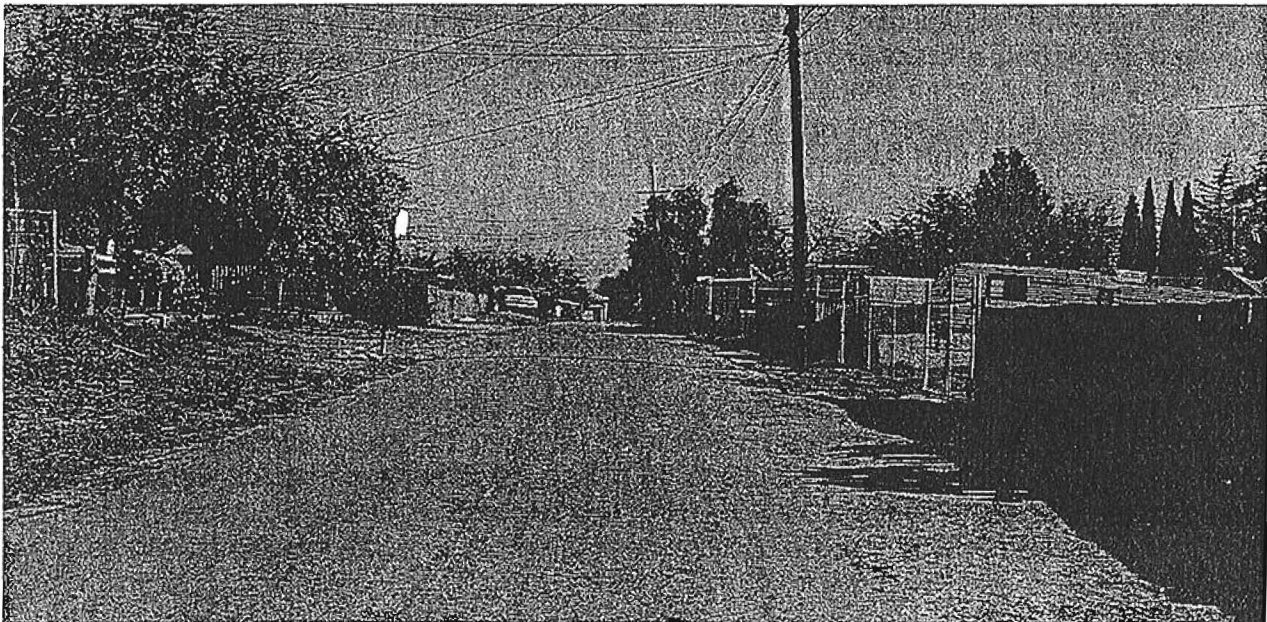
The largest capital cost item, by far, is the widening of Wilbur Avenue over a length of nearly 2 miles, from two lanes to four lanes, along with concurrent under-grounding of overhead power lines. Representing nearly \$11 million in estimated costs, these improvements would serve both Annexation Areas 1 and 2a. Although the roadway capacity increase represented by these improvements could be deferred for a period of time, it would be inefficient to complete these major improvements on a phased basis. These costs are expected to be borne by the developing properties within Areas 1 and 2b, should annexation and development take place. An additional \$1 million in roadway widening is identified for Area 2a (Fleming Lane), and roughly \$60,000 in overlay costs have been projected to stabilize and help arrest further deterioration of roadway improvements on the residential streets in Area 2b.

Figures 3-1 and 3-2 below reflect the condition of roadway improvements within the easterly portion of Area 2b, where a relatively inexpensive pavement overlay is recommended as an optional item.

**Figure 3-1: Roadway Improvements Along Viera Avenue in Area 2b**



**Figure 3-2: Roadway Improvements Along Brown Lane in Area 2b**





### 3.6 Needs Assessment and Funding Options

Estimates of capital facility improvement needs were jointly developed by the consultant and City engineering staff. As identified in Table 3-1, the need for various improvements range from "critical;" to "optional". Following is a summary of the classifications utilized in Table 3-1:

- (1) **Critical Immediate Need (C):** Improvements which should be funded and constructed to serve existing public needs within a period of approximately 5 years, regardless of future development.
- (2) **Long-Term Need (L):** Improvements upon which future development is dependent (note that the timely completion of such improvements could serve as an incentive to attract future development).
- (3) **Optional (O):** Those items which would normally be provided to deliver the same level of services currently enjoyed by residents and property owners within established City neighborhoods, but which are not necessarily needed for health and safety purposes.

Potential funding for each of the improvements listed in Table 3-1 has been assigned as follows:

- (1) **City Funded (A):** Those items which the City would pay for using general fund monies or specifically targeted sources of funding, such as available grants. These funds could be reimbursed by property owners who hook up to the completed facilities.
- (2) **Developer Funded (D):** Construction work to be paid for by future development projects in the vicinity.
- (3) **Property Owner Funded (P):** Local serving improvements to be paid for either by individual property owners, or through an assessment district.

Table 3-1: Potential Northeast Annexation Study Area Improvements

Improvement Item	Annexation Area <sup>5</sup>			Need Assessment <sup>6</sup>			Funding Source <sup>7</sup>			Approx. Cost (\$)
	1	2	3	C	L	O	A	D	P	
1. Sanitary Sewer										
a 800 l.f. 6" VCP in Trembath Ln.			x		x				x	68,800
b 700 l.f. 6" VCP in Lipton St. (south)			x		x				x	60,200
c 275 l.f. 6" VCP in Lipton St. (north)										23,650
d 1,450 l.f. 8" VCP in E. 18 <sup>th</sup> St. (west)			x		x			x		108,750
e 4,188 total l.f. 6" VCP in Viera Av., Vine Ln., Steward Ln., Brown Ln., Santa Fe Ave., and Walnut Ave.			x		x		x			475,408
f 800 l.f. 8" VCP in E. 18 <sup>th</sup> St. (east)			x		x			x		60,000
g 420 l.f. 8" VCP in Minaker Dr.	x				x			x		31,500
h 920 l.f. 8" VCP in Wilbur Ave (west)	x				x			x		69,000
i 8,720 total l.f. 12" VCP in Wilbur Ave (east) and south to 36" trunk line	x	x			x			x		959,200
j 2,700 l.f. 8" VCP in Fleming Ln.		x			x			x		202,500
2. Storm Drainage										
a 2,126 l.f. 24" CP on Vieira & adjoining streets, connecting to 60" trunk line			x			x			x	1,116,250
b 800 l.f. 24" CP in Trembath Ln			x			x			x	152,000
c 800 l.f. 24" CP in Lipton Ln.			x			x			x	152,000
d 2,700 l.f. 36" CP in Fleming Ln.		x				x		x		594,000
3. Treated Water										
a 4,605 l.f. 6" C-900 loop, Santa Fe, Walnut, Brown to Viera Ave.			x	x			x			345,375
b 900 l.f. 8" C-900 in Vine Ln.			x	x			x			70,200
c 355 l.f. 8" C-900 in Steward Ln.			x	x			x			26,625
d 800 l.f. 8" C-900 in Trembath Ln			x	x			x			62,400
e 800 l.f. 8" C-900 in Lipton Ln.			x	x			x			62,400
f 420 l.f. 8" C-900 in Minaker Dr.	x				x			x		32,760
g 2,700 l.f. 8" C-900 in Fleming Ln. (loop to Bridgehead Rd.)		x			x			x		210,600
h 370 l.f. C-900 in E. 18 <sup>th</sup> Street			x		x			x		28,860
4. Roadway										
a Widen Wilbur Ave. from 2 to 4 lanes within 102' R/W (672,465 s.f. total)	x	x			x			x		6,954,552
b Widen Fleming Ln. to collector standard (add paving 88,808 s.f.)		x			x			x		1,088,478
c New local street north of E. 18 <sup>th</sup> 300 l.f. (between Viera and Willow)			x		x			x		300,000
d 4,800 l.f. of 1.5" overlay of Viera Av. and adjoining streets			x			x	x			62,865
5. Power and Cable										
a Underground power lines along approx. 10,000 l.f. of Wilbur Ave.	x	x			x			x		3,900,000
Total:										17,218,373

<sup>5</sup> Corresponds to three Annexation Areas as identified on map Figure 1.

<sup>6</sup> Three categories include Critical (C), Long-Term (L), and Optional (O); see text for further description.

<sup>7</sup> Possible funding sources identified include the City of Antioch (A), Developers (D), and Property Owners (P).

A summary of capital facilities to be maintained within the Northeast Antioch Annexation Study Area was developed, based on the post-development infrastructure system expansion. This information has been prepared for use in preparing the fiscal impact analysis presented in Chapter 4.

**Table 3-2: Maintained Capital Facilities, by Annexation Area**

Facility	Area 1	Area 2A	Area 2B	Total
Maintained Streets	1.67 miles	0.75 miles	1.25 miles	3.67 miles
Sanitary Sewer (6-12" VCP)	1.67 miles	0.75 miles	1.81 miles	4.23 miles
Water (6-8" C-900)	0.08 miles	0.75 miles	1.24 miles	2.07 miles
Storm Drain (24-36" CP)	0	0.51 miles	1.42 miles	1.93 miles

Sanitary sewer, water and storm drain facilities listed are all new improvements which may be constructed to serve the study area properties. Street improvements reflect lineal distance based on existing facilities. Note, however, that Wilbur Avenue would be widened from 2 to 4 lanes as new development occurs. In addition, a 1.5" pavement overlay is planned throughout all of the streets in Area 2b, due to their very poor current condition.

## **4. Municipal Services and Operational Costs**

The annexation area descriptions included in Section 2 of this report delineate the available phasing options for consideration by the Antioch City Council. Section 3 provides a preliminary analysis of land resources and potentially available development opportunities. Section 4 builds on the land use and development analysis, by examining the scope and potential cost of public infrastructure which may be extended to service both existing and anticipated future development. The Municipal Services and Operational Costs Section utilizes the same land use and development information from Sections 2 and 3 to evaluate the potential costs and revenues associated with extending City services to each of the three areas. This Section provides a comparative fiscal impact analysis of anticipated City revenues and expenses both during the first year following annexation and at full build-out of the annexed lands. Unlike previous City studies involving fiscal analysis of predominantly vacant residential and commercial properties, this study focuses on primarily on developed and redeveloping residential and industrial properties.

Two important variables are included in this analysis, leading to a range of potential revenues and expenditures. As described in greater detail below, two separate revenue and expenditure models were prepared for this analysis utilizing different assumptions about employee service costs and potential future sales tax revenues. These assumptions were built into the modeling scenarios to arrive at a range of possible net City revenues or deficits for each of the three Annexation Areas and the Study Area as a whole.

### **4.1 Methodology**

This section of the Feasibility Study assesses the fiscal impact of annexing each of the three Study Areas to the City of Antioch, based on the revenues and expenditures expected in the City's General Fund and the Gas Tax fund. This analysis focuses on the impact of annexing the Study Areas on the operating budget of the City (General Fund), and the impact on the City's Gas Tax Fund. Infrastructure costs (such as sewer and water facility improvements) are discussed in a separate section. The analysis does not examine the impacts on rate-based enterprise funds, as they are assumed to be self-supporting. As discussed below, different assumptions have been developed and utilized to calculate employee service costs and potential sales tax growth, and reflected in two separate fiscal modeling scenarios.

**Land Use - Base Year and Build-Out Year Analysis:** Two scenarios are analyzed. First, the Study analyzes the impact of the existing residential and commercial land uses (base year). Second, the Study analyzes the impact of the annexation area after full build-out of all vacant land (as described in Table 4-2). The second scenario estimates the expected revenues and expenditures in the year of full build-out of all properties in the Study Area. It assumes a 0.30 floor area ratio build-out of vacant and under-utilized properties. Both analyses use 2005 dollars.



**Average Cost Approach:** A fiscal analysis typically assumes that existing City service levels will be provided to the annexed areas, and accordingly, utilizes the existing average cost of providing City services as the basis for projecting the cost of providing similar City services to the annexed areas. The impact of the annexation and subsequent development on most city departments is determined by calculating the average cost per current resident (and employee, as noted below), and projecting that average cost for future residents (and employees).

While an annexed area may not generate a requirement for a full time City employee in any individual department, on average, it will impose incremental costs similar to existing costs, in order to maintain existing service levels. For example, a City may have an existing service level standard of one police officer per thousand residents. An annexed area of 500 residents would generate the need for one-half of one additional officer. Obviously, the City cannot hire one-half of a police officer to serve this new area. However, while the particular annexation may not actually trigger the hiring of the new officer, it is appropriate to allocate one-half of the cost of one officer to that area in a fiscal analysis. This logic and approach is carried through for each city service and department in this analysis.

**Including Employees as "Employee Resident Equivalents":** New residents will impact City services. In addition, commercial and industrial land uses, and their employees also place demands on City services. However, one employee is generally not considered to have the same impact on City services as one resident. This analysis utilizes two alternative assumptions about the impact of full-time employees on City services. Scenario 1 utilizes the number of hours a fulltime employee is present (40) divided by the number of hours in a week (168) as the ratio of the impact one employee will have on City services, as compared to one resident. Thus, for purposes of the fiscal analysis, one employee is considered to have the impact of .24 residents (40/168) in Scenario 1.

Since the City does not yet have a well documented cost burden rate for employees, an alternative approach to estimating full-time employee service costs was included in Scenario 2. This alternative assumes that the employee service cost burden to be one-half that of a resident. This ratio is equal to the most conservative approach identified in other comparable studies prepared for other Bay Area communities. In Scenario 2, the "employee resident equivalent" rate is therefore 0.50. That is, one employee is considered to equal .50 resident equivalents.

Scenarios 1 and 2 utilize these two alternative methodologies which result in a range of impacts from development of commercial and industrial land uses on City services. In both instances, the methodologies assume separate and additive costs for employees, regardless of whether they may or may not also be City residents. The analysis assumes one new employee for each 2,000 additional square feet of non-residential space within the Study Area at build-out. This employee density ratio is consistent with heavy industrial development expectations for the Study Area. Combined, the Study Area residents and the "employee resident equivalents" equal the total "resident equivalents" in each Study Area (see Table 4-1, below).

**Population Assumptions:** Since an accurate population count was not available to match the boundaries of the three Annexation Areas, population estimates were developed using two alternative assumptions. Scenario 1 estimates population based on factors related to the number of registered voters in the annexation areas. There are 169 registered voters in the Study Area as a whole (see Table 4-2). In 2004, there were 2.45 residents per registered voter in Antioch (source: Contra Costa County Clerk; State Controllers Office). Based on this data, the analysis similarly assumes that there are 2.45 residents for each registered voter in each of the Study Areas. Therefore in Scenario 1, the base year number of residents for purposes of fiscal impact analysis is equal to 2.45 times the number of registered voters.

In Scenario 2, the number of "resident equivalents" is estimated based on the number of current and potential future dwelling units. An average conservative factor of 3.0 persons per dwelling unit was utilized to calculate the residential population for each of the Annexation Areas.

Table 4.1 presents the range of residents and employee resident equivalents estimated for Areas 1, 2a and 2b under base year conditions, as calculated under Scenarios 1 and 2. The range of total resident equivalents for the Study Area as a whole, as shown in Table 4.1, varies by 63.

**Table 4-1: Base Year Residents and Employee Resident Equivalents,  
 by Annexation Area for Scenarios 1 and 2**

	Area 1	Area 2a	Area 2b	Total
<b>Scenario 1</b>				
Residents (registered voters x 2.45)	0	76	338	414
"Employee resident equivalents" (employees x .24)	59	18	3	80
Total resident equivalents	59	94	341	494
<b>Scenario 2</b>				
Residents (dwelling units x 3.0)	0	45	345	390
"Employee resident equivalents" (employees x .50)	124	38	6	167
Total resident equivalents	124	83	351	557

(Note: Independent rounding may cause details and totals to differ)

The build-out year "resident equivalents" have been calculated in Table 4-2 using the same methodology for Scenarios 1 and 2. The range of future build-out resident equivalents is greater in Table 4-2 (1,352 in Scenario 2 versus 891 in Scenario 1), because of the projected employment growth within the Study Area.

**Table 4-2: Build-Out Year Residents and Employee Resident Equivalents, by Annexation Area for Scenarios 1 and 2**

	Area 1	Area 2a	Area 2b	Total
<b>Scenario 1</b>				
Residents (registered voters x 2.45)	0	76	353	429
"Employee resident equivalents" (employees x .24)	296	137	28	462
Total resident equivalents	296	213	381	891
<b>Scenario 2</b>				
Residents (dwelling units x 3.0)	0	45	345	390
"Employee resident equivalents" (employees x .50)	617	286	59	962
Total resident equivalents	617	331	404	1,352

(Note: Independent rounding may cause details and totals to differ)

## 4.2 Revenue Assumptions and Analysis

Each major General Fund and Gas Tax Fund revenue source has been analyzed and estimated for the Study Area. Some revenues are best projected on a per capita basis, using fiscal year 2004-05 budget estimates as the base. For these factors, Table 4-3 indicates the per capita amount that has been used to estimate base year and build-out year revenues. Other specific revenues have been determined to be more accurately projected based on factors other than per capita. The analyses for these revenues are described in the case studies in this section of this report.

In the case of sales tax revenues, the base year revenues are calculated for the Study Area using the average dollar per aggregate non-residential square footage rate from the current City Budget. Scenario 1 increases the sales tax revenues for all three Annexation Areas based on two factors: (a) increased spending resulting from additional employees within the study area, and (b) an assumed increase in overall retail sales proportionate to the increase in development at the time of build-out. As a more conservative estimate of revenues from

sales tax, Scenario 2 includes the employee-based spending increase, but eliminates all sales tax revenue increases from expansion of businesses (no new or enlarged relates sales operations). As reflected in Table 4-3 (and detailed in Appendix E) these alternative Scenarios result in a significant difference in total projected revenues at build-out. Scenario 1 shows retail sales throughout the Study Area increasing from just over \$31,000 to over \$189,000 (with proportionately expanded retailing), whereas Scenario 2 shows sales tax growth peaking at only \$118,000. As discussed in Section 4.4, despite the City's modest rate of local revenues from total retail sales tax, this range is an important factor in determining whether service costs can adequately be met at build-out of the Study Area.

**Property Tax Analysis:** The City of Antioch and Contra Costa County have negotiated a Master Property Tax Exchange Agreement for annexations where the total assessed valuation is less than \$10 million, to determine the percentage of the property tax dollar that will be transferred to the City upon annexation. However, in the aggregate, the assessed valuation of the Northeast Antioch Study Area exceeds \$10 million, so the Master Property Tax Exchange Agreement will not automatically apply. Consequently, the City and County will need to reach agreement as to whether the current Master Agreement rates should be applied, and if not, what percentage of the property tax dollar should be transferred to the City upon annexation.

In the absence of an agreement covering the Northeast Antioch Study Area, this analysis uses the framework provided by the Master Property Tax Transfer Agreement as a guideline. Under that agreement, 19.5% of the County's share of the property tax resulting from the existing (base year) assessed valuation of the area is transferred to the City, and 39% of the County's share of the property tax resulting from future growth of assessed valuation (the increment) will be transferred to the City. The County's current share of the property tax in the annexation areas is approximately 18.47%. Therefore, the factor used for the existing (base year) property tax is 3.6% ( $19.5\% \times 18.47\%$ ). The factor used for future property tax (the increment) is 7.2 % ( $39\% \times 18.47\%$ ).

The Contra Costa County Auditor's office reports that 10.1% of each one dollar in property tax revenue from property already within the city limits is received by the City of Antioch. If the 10.1% factor was used for the base year, the property tax revenue in that year alone would increase by \$92,035. If the 10.1% factor was used for the build-out year, the property tax revenue in that year would increase by \$184,125.

The actual percentage and amount of property tax revenue transferred will be subject to negotiations between the City and the County, and is a significant factor in the fiscal analysis of the annexation areas.

The build-out year square footage for non-residential property has been estimated by applying a floor area ratio of 0.30 to each acre of developable land. Future industrial/commercial property assessed value is calculated at a conservative average of \$100 per square foot of new gross floor area.



**Franchise Tax Analysis:** Franchise taxes are governed by state statutes and local agreements. The State Broughton Act and the Franchise Fee Act regulate franchise payments for gas and electric services, and are calculated at two percent of gross annual receipts. Cable franchise fees are limited to a maximum of 5% of gross annual receipts. While franchise payments are based on a percentage of gross receipts, the fiscal analysis uses a per capita calculation of \$21.85, based on the City of Antioch budgeted revenues.

**Business License Tax Analysis:** The analysis assumes a \$312.50 flat rate business license tax on commercial businesses in the Study Areas.

Build-out business license tax revenues are assumed to grow proportional to the increase developed acres.

**Property Transfer Tax Analysis:** A tax on the transfer of property (documentary transfer tax) occurs each time real property is sold. The City's rate is 27.5 cents per \$500 value (\$.55/\$1,000). On average, property transfer tax receipts are .0000925 multiplied by the total assessed value of properties in Antioch. This factor is used to calculate the property transfer tax revenue for the annexation areas.

**Sales Tax Analysis:** There are a few existing sales tax generating businesses in the Study Area. The analysis assumes that 1% of the sales from these businesses will be received by the City of Antioch in the form of sales tax revenue. Actual sales and sales tax information on specific individual businesses are not available. The sales tax estimates in the analysis are based on State Board of Equalization statewide taxable sales data for similar types of businesses.

The additional residents brought into the City as a result of future annexation of the Study Area are not assumed to generate any additional sales tax revenue for Antioch, as their existing buying habits will be unaffected by the decision to annex their property into Antioch. Base year revenues have been estimated in Appendix E (and incorporated into Table 4-4) for the Study Area as a whole at roughly \$37,000. Build-out estimates rely on two alternative assumptions to arrive at a range of potential revenues. Scenario 1 and 2 both increase build-out sales tax revenues for all three Annexation Areas based on an increase in spending linked new employees' added incidental shopping, lunch time expenditures and other purchases in Antioch. These employee purchases are estimated on the basis of approximately ten dollars per day per employee in Scenario 1 (using the equivalent of .24 residents per employee), and at approximately \$21 per employee per day in Scenario 2 (using the equivalent of .50 residents per employee).

In addition, Scenario 1 includes an assumed increase in overall retail sales at build-out, which is proportionate to the increase in overall development square footage. Scenario 2 assumes no such increase in commercial development at the time of build-out, and therefore limits growth in sales tax revenues to the employee-based spending increase only. Consequently, the range in sales tax revenues between these alternatives shows roughly a \$70,000 greater net gain for Scenario 1 at the time of build-out (see Appendix E and Table 4-5).

**Motor Vehicle In-Lieu License Fee (VLF) Analysis:** The 2004 State Budget Act reduced the amount of VLF revenues to local governments for a period of two years, ending after fiscal year 2005-06. The Budget Act also permanently shifted approximately 91% of the VLF revenues from local governments to the State, in return for an equivalent permanent local government revenue source called "property taxes in-lieu" of VLF. Future growth in the "property taxes-in lieu" component of VLF will be based on growth in assessed valuation in each jurisdiction. However, the Act does not allow the base assessed valuation of annexed areas to be included in the calculation of future growth of assessed valuation. Only the increase in assessed valuation in years subsequent to the base year of the annexation can be included for purposes of calculating the future growth in the "property taxes in-lieu" component of VLF.

The result is that only the remaining 9% component of the former VLF revenue distributed on a per capita basis (\$5.18 per capita) will be received in the base year as a result of the annexation.

For the build-out year, VLF per capita increases by the percentage increase in total assessed valuation over the base year (note that there is only a very slight difference in population and related revenues between Scenarios 1 and 2).

**Miscellaneous Licenses and Permits:** General Fund miscellaneous reimbursements are fixed revenues and are not increased as a result of annexation. Building permit fees and costs are assumed to be equal and are not included in the analysis. Planning fees and costs are assumed to be equal and are not included in the analysis.

**Homeowner's Property Tax Relief Reimbursement Analysis:** The State grants a \$7,000 assessed valuation exemption for each owner occupied unit, and reimburses local agencies for some of the loss of property tax revenue resulting from the exemption. The reimbursement averages \$2.78 per residential unit in Antioch.

**Transfers from Other Funds:** Only those transfers from other funds where revenues are variable with population are assumed to be increased on a per capita basis.

**Revenue Assumption Table:** Table 4-3 summarizes the case studies discussed in this section, and provides the per capita revenue factors incorporated in the fiscal analysis.

**Table 4-3: Study Area Revenue Assumptions**

Revenue	Assumptions	Source
Property tax – current secured	Case study used to estimate property tax percentage of 3.6% of base year and 7.2% of increment over base year	Antioch/Contra Costa County Master Property Tax Transfer Agreement
Property tax – unsecured and other	8.6% of secured property tax revenue	City of Antioch budget
Franchise tax	\$21.85 per capita	City of Antioch budget
Business license tax	\$312.50/business	City of Antioch
Property transfer tax	Case study	City of Antioch budget
Sales tax	Case study	State Board of Equalization
Motor vehicle tax (VLF)	Case study	State Controllers Office
Transient lodging taxes	None	Sinclair & Associates
Building permit	No net impact	Sinclair & Associates
Miscellaneous permits	\$0.91 per capita	City of Antioch budget
Fines and penalties	\$2.18 per capita	City of Antioch budget
Homeowners property tax relief	Case study – \$2.03/residential parcel	Sinclair & Associates
Plan check & inspection fees	No net impact	Sinclair & Associates
Miscellaneous service charges	\$8.07 per capita	City of Antioch budget
Miscellaneous revenue	\$1.19 per capita	City of Antioch budget
Transfers	\$13.03 per capita; qualifying transfers only	City of Antioch budget
Gas tax fund revenues	\$36.54 per capita	State Controller's Office City of Antioch budget

Source: As noted; Sinclair & Associates

**Fiscal Impact Model Revenue Projections:** The fiscal analysis calculated the base year revenues using the assumptions described above. The revenue estimates include General Fund and Gas Tax Fund revenues. The revenue estimates do not include infrastructure mitigation impact fees, rate-based revenues in enterprise funds or other restricted fund revenues.

Table 4-4 summarizes the revenues for the base year. Appendix E provides detailed estimates for each revenue source.

**Table 4-4: Base Year Revenues, by Annexation Area for Scenarios 1 and 2**

	Area 1	Area 2a	Area 2b	Total
Scenario 1 Revenue	\$63,536	\$38,848	\$45,995	\$148,379
Scenario 2 Revenue	\$63,536	\$35,964	\$46,679	\$146,179

Source: Sinclair & Associates (additional details in Appendix E-1 and E-5)

Table 4-5 summarizes the revenues for the build-out year. Appendix C provides detailed estimates for each revenue source.

**Table 4-5: Build-Out Year Revenues, by Annexation Area for Scenarios 1 and 2**

	Area 1	Area 2a	Area 2b	Total
Scenario 1 Revenue	\$263,570	\$257,225	\$69,921	\$590,717
Scenario 2 Revenue	\$287,555	\$155,863	\$70,932	\$514,350

Source: Sinclair & Associates (additional details in Appendix E-3 and E-7)

### **4.3 Expenditure Assumptions and Analysis**

**Current Level of Service:** The expenditure analysis is based on the assumption that the current service levels provided within the City of Antioch would be provided in the Study Area. It includes General Fund expenditures and Gas Tax Fund expenditures for road maintenance.

Each major departmental expenditure program has been analyzed and projected for the base year and for the build-out year, using current (2005) dollars. The General Fund departmental expenditure projections are based on per capita costs, where the "population" includes a factor of .24 resident equivalents for each employee in Scenario 1, and .50 in Scenario 2 (resulting in a range of potential employee-related expenditures as shown in Tables 4-7 and 4-8). Costs for building permits and plan checking services are not included, as they are assumed to equal the revenues received (which are similarly discounted in the revenue analysis).

Road maintenance costs from the gas tax fund are based on a per mile standard. In 2004-05, Antioch budgeted \$20,631 for each mile in the road system. The additional miles of road in the Study Area are assumed to incur a similar level of effort and cost. The expenditure analysis does not include capital infrastructure improvements (such as sewer and water infrastructure), rate-supported expenditures in enterprise funds, or other restricted fund impacts and costs.



**Expenditure Assumption Table:** Table 4-6 summarizes the cost of services incorporated in the fiscal analysis. Note that "per capita" costs identified in Table 4-6 apply uniformly to both analysis Scenarios; however, the total resident equivalent differences from Table 4-2 have an impact on the range in expenditures shown in Tables 4-7 and 4-8 below.

**Table 4-6: City Service Expenditure Assumptions**

Department / Expenditure	Assumptions	Source
General Government	\$ 53.51 per capita	City of Antioch budget
Public Works	\$ 58.57 per capita	City of Antioch budget
Police Services	\$197.30 per capita	City of Antioch budget
Leisure and Community Services	\$ 7.39 per capita	City of Antioch budget
Development Services	\$ 23.89 per capita (net of fee-based services)	City of Antioch budget
Road Maintenance	\$20,631 per two lane centerline mile	City of Antioch budget; Caltrans

Source: As noted; Sinclair & Associates

**Fiscal Impact Model Expenditure Projections:** Table 4-7 summarizes the expenditures for each of the Study Areas for the base year. Appendix E provides more detailed estimates for each major department's projected expenditures for each of the three areas in the base year.

**Table 4-7: Study Area Base Year Expenditures by Annex. Area for Scenarios 1 and 2**

	Area 1	Area 2a	Area 2b	Total
Scenario 1 Expenditures	\$54,642	\$47,468	\$141,911	\$244,021
Scenario 2 Expenditures	\$74,609	\$42,298	\$139,914	\$256,820

Source: Sinclair & Associates (additional details in Appendix E-2 and E-6)

Table 4-8 summarizes the expenditures for each of the Annexation Areas for the build-out year. Appendix E provides more detailed estimates for each major department's projected expenditures for each of the three areas in the build-out year. The roughly \$157,000 additional build-out year expenditures for Scenario 2 are attributable to the higher employee resident equivalent factor identified in Table 4-2 above.

**Table 4-8: Study Area Build-Out Year Expenditures by Annex. Area for Scenarios 1 & 2**

	Area 1	Area 2a	Area 2b	Total
Scenario 1 Expenditures	\$169,766	\$88,090	\$155,499	\$413,355
Scenario 2 Expenditures	\$279,030	\$128,197	\$163,203	\$570,429

Source: Sinclair & Associates (additional details in Appendix E-4 and E-8)

#### 4.4 Fiscal Impact Summary

The fiscal impact analysis calculates the revenues and expenditures for the base year and the build-out year (which can reflect the ultimate relationship between revenues and costs). Table 4-9 summarizes the results of the fiscal analysis for the base year. The range of surplus or deficit figures between Scenarios 1 and 2, as discussed above, are a result of: (a) lower assumed employee resident equivalents in Scenario 1 compared to Scenario 2 (0.24 versus 0.50); (b) the assumed absence of expanded sales tax generating uses in Scenario 2; and (c) slightly lower residential population estimates in Scenario 2 compared to Scenario 1 (based on registered voters as opposed to dwelling units).

**Table 4-9: Summary of Base Year Impacts by Annex. Area for Scenarios 1 & 2**

	Area 1	Area 2a	Area 2b	Total
<b>Scenario 1</b>				
Revenues	\$63,536	\$38,848	\$ 45,995	\$148,379
Expenditures	\$54,642	\$47,468	\$141,911	\$244,021
Surplus/(deficit)	\$ 8,894	(\$ 8,620)	(\$ 95,916)	(\$ 95,642)
<b>Scenario 2</b>				
Revenues	\$63,536	\$35,964	\$46,679	\$146,179
Expenditures	\$74,609	\$42,298	\$139,914	\$256,820
Surplus/(deficit)	(\$11,073)	(\$ 6,333)	(\$93,235)	(\$110,641)

Source: Sinclair & Associates (note: independent rounding may cause details and totals to differ)

Table 4-10 summarizes the results of the fiscal analysis for the build-out year.

**Table 4-10: Summary of Build-Out Year Impacts by Annex. Area for Scenarios 1 & 2**

	Area 1	Area 2a	Area 2b	Total
<b>Scenario 1</b>				
Revenues	\$263,570	\$257,225	\$69,921	\$590,717
Expenditures	\$169,766	\$ 88,080	\$155,499	\$413,355
Surplus/(deficit)	\$ 93,804	\$169,145	(\$85,578)	\$177,371
<b>Scenario 2</b>				
Revenues	\$287,555	\$155,863	\$70,932	\$514,350
Expenditures	\$279,030	\$128,197	\$163,203	\$570,429
Surplus/(deficit)	\$8,525	\$27,666	(\$92,271)	(\$56,080)

Source: Sinclair & Associates (note: independent rounding may cause details and totals to differ)

Additional sources (City staff):  
Julie Brown, Assistant Finance Director  
Phil Harrington, Public Works Director  
Allan Cantando, Police Captain

## 5. Environmental Assessment and CEQA

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Pursuant to the requirements of the California Environmental Quality Act (CEQA), an environmental determination will need to be made with respect to the annexation program concurrently with processing of the initial annexation application. According to CEQA Guidelines §15319(a) annexation of territory which has been substantially developed in accordance with the current (County) zoning or the City's pre-zoning may be exempt from further review, provided that the extension of new urban services (such as sewer) would not result in any significant new development. This provision may be applicable to Area 2b which involves annexation of the established residential community north of East 18<sup>th</sup> Street and along Viera Avenue (only if processed separately).

As lead agency under CEQA, the City of Antioch will have an opportunity to prepare a complete Initial Study of possible environmental effects associated with implementation of the annexation program. This environmental document would be utilized by other responsible agencies, including DDSD and LAFCO in their consideration of the project. Assuming that mitigation measures may be devised to eliminate or substantially reduce any identified impacts, the City may prepare a Negative Declaration pursuant to Guidelines §15070. Alternatively, an environmental impact report would be required if the analysis shows that the long-term effects of the contemplated annexation option are likely to remain significant even after mitigation. Our preliminary assessment at a programmatic level suggests that no significant effects would result from City and DDSD annexation, since no physical effects would directly or indirectly result.

Additional project-specific analyses would subsequently be required to evaluate the physical effects of future development as contemplated. This would include any plans for major capital facility expansions, such as roadway widening, determined to be necessary to support proposed future development.

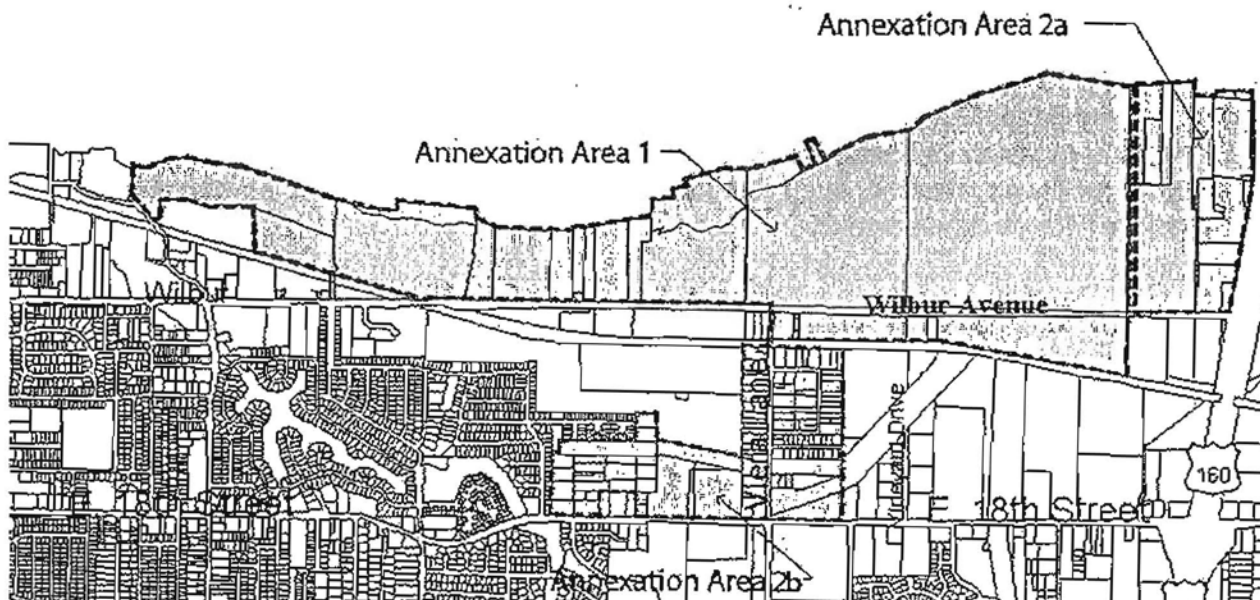
## 6. Recommendations for Implementation

This report identifies three distinct Annexation Areas comprising the 678-acre Study Area, as shown in Figure 6-1. Area 1 is legally uninhabited and may be supported by a majority of land owners who also control a majority of the assessed value within the 481 acres area. Areas 2a and 2b are both legally inhabited and would be subject to an election if either area received protests from at least 25% but not more than 50% of the registered voters. Protests or subsequent election results showing a majority protest among registered voters would result in a termination of the proceedings.

Separate applications for annexation of all three areas (which involve a concurrent reorganization of both the City and DDWD boundaries) may be prepared and processed concurrently through the Contra Costa LAFCO. Should either or both of the registered voter-controlled areas fail to gain majority support, then Area 1 could proceed independently.

Figure 6-1: Summary of Annexation Areas

### Northeast Antioch Annexation Areas





As shown in Table 6-1, substantial capital costs have been estimated for a range of utility and roadway improvements identified as needed on a "critical", "long term", or "optional" basis. The \$10.5 million in Area 1 capital costs and \$3.5 million in Area 2a capital costs are almost exclusively tied to support of future potential development, and would be funded by identified projects. Of the \$3.2 million in capital costs identified for Area 2b, only a portion (roughly \$800,000) are considered "critically" needed to address immediate health and safety needs.

**Table 6-1: Summary of Annexation Areas**

Annex. Area	Total Acres	Potential Develop. Acres	Capital Improve. Costs	Net Base Year Revenue	Net Build-Out Year Revenue	Comment
1	481	151	10,499,717	+\$8,894 to -\$11,073	\$93,804 to \$8,525	Uninhabited territory. Contains 62% of available future development potential. Slightly-to-substantially positive long-term revenues dependent on negotiation of tax transfer agreement, employee service cost variables, and potential for sales tax revenues. All capital improvements to be developer funded on long-term basis.
2a	94	76	3,488,474	-\$8,620 to -\$6,333	\$169,145 to \$27,666	Inhabited territory. Contains 31% of future development potential, but most requires redevelopment of underutilized property. Small net fiscal impact to City until redevelopment occurs. Long-term revenues positive but potentially compromised by employee service costs and lack of growth in retail sales. Capital improvements to be developer-funded.
2b	103	16	3,230,182	-\$95,916 to -\$93,235	-\$85,578 to -\$92,271	Inhabited territory with very limited development potential, and substantial fiscal impact to City. Lack of sewer or water service to approx. 350 residents requires critical water system improvements of approximately \$600,000 capital investment without funding source. Substantial initial and long-term fiscal impact to City.
Total	678	243	17,218,373	-\$95,642 to -\$110,641	\$177,371 to -\$56,080	Net fiscal impact of servicing Area 2b results in initial losses of roughly \$100,000 annually if entire Study Area is annexed. Net operating losses would continue until at least 40% of available land in Study Area is developed, and could continue after build-out, depending on employee service costs and growth in retail sales.

Municipal service operational costs are projected to exceed projected revenues within Area 2b under both initial and post-development build-out conditions. Analysis of service costs and revenues in Area 1, however, indicates a slightly positive to slightly negative net fiscal impact during the first year following annexation; at complete build-out of all available

properties the Area 1 impact would be positive, and could approach \$94,000 annually, depending on the growing costs of providing services to an expanding daytime population, and also depending on whether land use policies accommodate a proportionate growth in retail sales (as further discussed in Chapter 4).

The small initial deficit identified in Area 2a would be offset after partial development of a portion of the available 76 acres. However, the potential for a substantial net positive fiscal impact from Area 2a is tempered by questions regarding the potential for growth in retail sales and the increasing costs of delivering services to increasing numbers of workers within the Area.

In combination the overall fiscal impact for annexation of the entire Study Area is likely to be negative (by almost \$100,000) in the first year, but could improve to a positive net effect after development of roughly one-third of the available 243 acre of land. Alternatively, build-out revenues could continue to exceed revenues for the Study Area as a while, if future development did not include a proportionate increase in retail sales and employee service costs tended to the high side of the range described in Chapter 4. These figures and conclusions could be positively or negatively affected by negotiation of a new tax exchange agreement with the County.

## 7. Appendices

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7

STREET NAME	IMPROVEMENTS NEEDED	(L.F.)	ROADWAY (SQ. FT.)	CURB, GUTTER (L.F.)	SIDEWALK (SQ. FT.)
<i>Trembath Lane</i>	8" C-900 WATER	800'			
	6" V.C.P. SEWER	800'			
	24" CP STORM DRAIN	800'			
<i>Lipton Street</i>	8" C-900 WATER	800'			
	6" V.C.P. SEWER	975'			
	24" CP STORM DRAIN	800'			

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TOTALS:	<u>Total Quantities</u>	<u>Unit Price (approx.)</u>	<u>Total Price (approx.)</u>
	• 6" C-900 WATER.....4,960 L.F.	\$75.00	\$372,000.00
	• 8" C-900 WATER.....5,990 L.F.	\$78.00	\$467,220.00
	• 6" V.C.P. SEWER.....7,303 L.F.	\$86.00	\$628,058.00
	• 8" V.C.P. SEWER.....6,290 L.F.	\$75.00	\$471,750.00
	• 12" V.C.P. SEWER.....8,720 L.F.	\$110.00	\$959,200.00
	• 24" C.P. STORM DRAIN.....7,475 L.F.	\$190.00	\$1,420,250.00
	• 36" C.P. STORM DRAIN.....2,700 L.F.	\$220.00	\$594,000.00
	• UNDERGROUND POWER LINES.....10,000 L.F.	\$390.00	\$3,900,000.00
	• 1.5" PAVEMENT OVERLAY.....62,865 SQ. FT.	\$1.00	\$62,865.00
	• CURB AND GUTTER (median).....18,985 L.F.	\$38.00	\$721,430.00
	• CURB AND GUTTER (sidewalk).....25,455 L.F.	\$38.00	\$967,290.00
	• SIDEWALK.....249,116 SQ. FT.	\$8.70	\$2,167,310.00
	• ROADWAY (full section).....761,273 SQ. FT.	\$5.50	<u>\$4,187,000.00</u>
		<b>TOTAL:</b>	<b>\$16,918,373.00</b>

<i>Santa Fe Avenue</i>	6" C-900 WATER	600'
	6" V.C.P. SEWER	1,340'
	24" CP STORM DRAIN	1,340'

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<i>Walnut Avenue</i>	6" C-900 WATER	775'
	6" V.C.P. SEWER	800'
	24" CP STORM DRAIN	815'

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<i>Brown Lane</i>	6" C-900 WATER	600'
	6" V.C.P. SEWER	350'
	24" CP STORM DRAIN	580'

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<i>Vine Lane</i>	8" C-900 WATER	900'
	6" V.C.P. SEWER	1,020'
	24" CP STORM DRAIN	1,014'

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<i>Steward Lane</i>	6" C-900 WATER	355
	6" V.C.P. SEWER	338
	24" CP STORM DRAIN	326

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<i>18th Street</i>	8" C-900 WATER	370'
	8" V.C.P. SEWER	2,250'

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# NORTH/EAST ANTIOCH ANNEXATION

STREET NAME	IMPROVEMENTS NEEDED	(L.F.)	ROADWAY (SQ. FT.)	CURB, GUTTER (L.F.)	SIDEWALK (SQ. FT.)
<i>Minaker Road</i>	8" V.C.P. SEWER	420			
	8" C-900 WATER	420			
<i>Wilbur Avenue</i>	8" V.C.P. SEWER	920			
	12" V.C.P. SEWER	8,720			
	UNDERGROUND POWER LINES	10,000			
	WIDENING FROM 2 TO 4 LANES		672,465	20,655 (sidewalk) 18,985 (median)	201,112
<i>Flemming Lane</i>	8" C-900 WATER LOOP TO BRIDGEHEAD RD.	2,700			
	8" V.C.P. SEWER	2,700			
	36" C.P. STORM DRAIN	2,700			
	WIDEN TO COLLECTOR STANDARD		88,808	4,800 (sidewalk)	48,004
<i>Viera Road</i>	6" C-900 WATER	2,630			
	6" V.C.P. SEWER	1,680			
	24" CP STORM DRAIN	1,800			
	1.5" PAVEMENT OVERLAY		62,865 (overlay)		

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IN THE BOARD OF SUPERVISORS  
OF  
CONTRA COSTA COUNTY, STATE OF CALIFORNIA  
DEC 12 1980

In the Matter of

Adopting a Master Property Tax Transfer  
Agreement for the Allocation of Property  
Taxes Between the County of Contra Costa  
and the City of Antioch

RESOLUTION NO. 80/1366

IT IS BY THE BOARD OF SUPERVISORS RESOLVED that:

1. Under the authority of Revenue and Taxation Code Section 99(d),  
it hereby adopts a Master Property Tax Transfer Agreement for the allocation  
of property taxes between the County of Contra Costa and the City of  
Antioch upon jurisdictional changes, which is incorporated herein  
as Exhibit "A", and

2. The Chairwoman of the Board of Supervisors is authorized to  
execute the above referred agreement on behalf of the County.

PASSED by the Board on December 2, 1980.

CERTIFIED COPY

I certify that this is a full, true & correct copy of the  
original document which it on file in my office, and that it  
was passed & adopted by the Board of Supervisors of  
Contra Costa County, California, on the date shown.  
ATTEST: J. R. OLSSON, County Clerk & ex-officio Clerk  
of said Board of Supervisors, by Deputy Clerk

*James R. Olsson* Dec 2, 1980

Orig: County Administrator  
cc: City of Antioch  
✓ Auditor-Controller  
County Counsel  
Local Agency Formation Commission

Post-it® Fax Note	7871	Date	1/6/85	# of pages	8
To	DICK	From	LESLIE		
Co/Dept		Co.	CO AUD		
Phone #		Phone #	925-646-2225		
Fax #	925-831-8016	Fax #	✓ ✓ 2649		

RESOLUTION NO. 80/1366

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MASTER PROPERTY TAX TRANSFER AGREEMENT FOR ALLOCATION OF PROPERTY  
TAX BETWEEN THE COUNTY OF CONTRA COSTA AND  
CITY OF ANTIOCH UPON JURISDICTIONAL CHANGES  
(R.&T.C. §99(d))

By Resolution 80/1366, adopted by the Board of Supervisors of the County of Contra Costa, and by Resolution 80/276, adopted by the City Council of Antioch, the County of Contra Costa (County) and the City of Antioch (City) agree as follows:

1. This Agreement is a master property tax transfer agreement, under authority of Revenue and Taxation Code §99(d) (Section 11, Chapter 801 of the Statutes of 1980), between the County and the City for the purpose of specifying the allocation of property tax revenues upon a jurisdictional change in which the City is an affected City and the County is an affected County.
2. Except for the exclusions specified herein, the jurisdictional changes governed by this Agreement are those local agency boundary changes defined in R.&T.C. §95(e) as jurisdictional changes, occurring during the applicable period of this Agreement, where the County is the affected County and the City is an affected City. The following jurisdictional changes are to be excluded from this Agreement: 1) boundary changes involving city incorporations or formations of districts (e.g., reorganizations involving concurrent formation of a special district and annexation to a city), 2) jurisdictional changes which would result in a special district providing one or more services to an area where such services have not been previously provided by any local agency and to which Section 99.1 of the Revenue and Taxation Code applies, 3) jurisdictional changes in which the total of the full values of all property in all tax rate areas comprising the affected territory exceed \$10,000,000, as shown on the latest equalized assessment rolls at the time the application is filed with the Local Agency Formation Commission, and 4) any jurisdictional change for which the sales tax revenue from the affected territory exceeds \$5000 for one or more of the three fiscal years preceding the date that the application is filed with the Local Agency Formation Commission.
3. The allocations specified herein (Paragraph 7, below) shall be made for any jurisdictional change governed by this Agreement as specified in Paragraph 2, above, if proceedings for the jurisdictional change have been or are completed after June 30, 1978; provided, however, that in the case of any such jurisdictional change for which proceedings are completed after December 31, 1982 this Agreement shall not apply if either of the parties hereto notifies the other in writing of the non-applicability of this Agreement and delivers such notification prior to the date that the petition or resolution for Local Agency Formation Commission approval of the jurisdictional change is accepted for filing by the

Commission or its Executive Officer. Notwithstanding any of the foregoing, any property tax revenue allocated prior to the date this Agreement is signed by both parties hereto shall not be subject to reallocation, but this Agreement shall apply to all future allocations for the jurisdictional change.

4. For any property tax allocation to be made under this Agreement, the Auditor-Controller of Contra Costa County shall first apply Paragraph 7 herein and first allocate the property tax revenues thereunder for the fiscal year for which the State Board of Equalization makes the tax rate area change(s) for the jurisdictional change. Such fiscal year shall be known as the "initial year" and all later fiscal years as "subsequent years". Such allocation shall continue indefinitely thereafter unless changed by agreement of both parties hereto or until changed under the terms of this Agreement upon a subsequent jurisdictional change involving one or more of the tax rate areas within the affected territory of the prior jurisdictional change.

5. The following definitions shall apply to this Agreement. The references to code sections in these definitions shall mean the code sections in effect on October 1, 1980.

- a. "Base tax" shall mean those property tax revenues specified as being subject to allocation in R.&T.C. §§96(a) and 96(d) for fiscal year 1979-80 and R.&T.C. §§97(a) and (b) for fiscal year 1980-81 and later fiscal years. For the fiscal years after the initial year in which property taxes are allocated under this Agreement for a jurisdictional change, the annual tax increment for the prior fiscal year shall be included in the base tax for the succeeding year. Notwithstanding the foregoing, base tax shall not include any property tax revenues allocated to any County free library.
- b. "Annual tax increment" shall mean those property tax revenues specified as being subject to allocation in R.&T.C. §96(c) for fiscal year 1979-80 and R.&T.C. §97(c) for fiscal year 1980-81 and later fiscal years. Annual tax increment shall include revenues accruing due to the increase in assessed valuation for the preceding fiscal year because of changes of ownership and new construction and because of the inflation adjustment authorized by Section 2(b) of Article XIII A of the California Constitution.
- c. "Annual tax increment allocation factor" shall mean the numerical factor, expressed as a percent, that is used to accomplish the proportionate allocation of the annual tax increment, as specified in R.&T.C. §98(e).

- d. "Proceedings" means those actions taken pursuant to Gov.C. §§35200-35315 or Gov.C. §§56290-56443.1.
- e. "Affected territory" shall mean as specified in Gov.C. §§35024 or 56023.5.
- f. "Affected City" shall mean as specified in Gov.C. §§35021 or 56021.
- g. "Affected County" shall mean as specified in Gov.C. §§35022 or 56022.
- h. "Affected District" shall mean as specified in Gov.C. §§56023 or 35023.

6. Insofar as not inconsistent with the foregoing definitions or any other provisions of this Agreement, the definitions of Sections 95 and 2215 of the Revenue and taxation Code, as in effect on October 1, 1980, shall apply to this Agreement.

7. For a jurisdictional change for which the allocation of taxes is made under this Agreement, such allocation shall be made in accordance with the following:

a. Initial year.

- 19.5%
- (1) Base tax. Except as provided in Paragraph 7a.(3) of this Agreement, City shall be allocated 19.500% of the County's base tax for the affected territory and the County shall be allocated the balance.

- 39%
- (2) Annual tax increment. Except as provided in Paragraph 7a.(3) of this Agreement, City shall have an annual tax increment allocation factor established for each tax rate area in the affected territory equal to 39.00% of the County's annual tax increment allocation factor for the tax rate area. The County's new annual tax increment allocation factor shall be its former factor minus the City's factor as derived in the preceding sentence.

- (3) For a jurisdictional change which results in the City's providing a service that had been provided by a special district, and if the City thereby receives any property tax revenues of the district as authorized by Revenue and Taxation Code Section 99, the formula for transfer of base tax and annual tax increment allocation factors from County to City shall be as follows:

(A) Base tax.



$$A = B \times 1/20$$

$$D = B - A$$

Where A = the amount of the County's base tax to be transferred to the City. This amount plus the base tax transferred from special district(s) becomes the City's initial base tax for the tax rate area.

B = the County's base tax before the transf

C = the portion (expressed as a percent) of the County's annual tax increment factor that will be transferred to the City from the County as determined by the formula expressed in Paragraph 7.a. (3) (B) below.

D = the County's base tax after the transfe

(B) Annual tax increment.

$$C = \frac{F - H}{F + G - H}$$

(If "H" is greater than "F", then C shall be zero (0).)

$$J = (E \times C) + H$$

$$K = E - (E \times C)$$

Where C = the portion (expressed as a percent) of the County's annual tax increment allocation factor that will be transferred to the City from the County.

E = the County's annual tax increment allocation factor before the transfer.

F = 17.31 % (this is the City's portion of the total fiscal year 1979-80 property tax allocation within the City's boundaries.)

G = 27.08 % (this is the County's portion of the total fiscal year 1979-80 property tax allocations within the City's boundaries)

H = the total of the annual tax increment allocation factors which will be transferred to the City from special districts in accordance with Revenue and Taxation Code Section 99.

J = the City's annual tax increment allocation factor after the transfer allocation.

K = the County's annual tax increment allocation factor after the transfer calculation.

- b. Subsequent years. In each subsequent year City's and County's allocation of property taxes from the affected territory will be made as set forth in Revenue and Taxation Code Sections 97 and 98. Each agency each year will be allocated its base tax (i.e. the tax allocated to the agency in the preceding year including the previous year's annual tax increment) plus its share of the current year's annual tax increment for the affected territory, such share being calculated by multiplying the tax resulting from growth in assessed valuation in the affected territory during the year times the agency's annual tax increment allocation factor(s) for that territory as determined in Paragraph 7a(2) or 7a(3)(B) above. The result (i.e. base plus increment) becomes the base tax for the next year's tax allocation calculations. Each agency's base tax and annual tax increment allocation factors may be subsequently modified only through negotiated exchanges in accordance with Revenue and Taxation Code Sections 99 and/or 99.1 for subsequent jurisdictional changes.

Dated: 12/11/80

Wendy C. Falsen  
Chairwoman, Board of Supervisors

Dated: December 10, 1980

James L. Roberts  
Mayor, City Council

FORM APPROVED BY  
COUNTY COUNSEL  
(11-25-80)

## RESOLUTION NO. 80/276

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF ANTIOCH  
ADOPTING A MASTER PROPERTY TAX TRANSFER AGREEMENT FOR  
THE ALLOCATION OF PROPERTY TAXES BETWEEN THE COUNTY  
OF CONTRA COSTA AND THE CITY OF ANTIOCH

BE IT RESOLVED by the City Council of the City of Antioch that, under the authority of Revenue and Taxation Code Section 99(d), it hereby adopts a Master Property Tax Transfer Agreement for the allocation of property taxes between the County of Contra Costa and the City of Antioch upon jurisdictional changes, which is incorporated herein as EXHIBIT "A"; and

BE IT FURTHER RESOLVED that the Mayor is authorized to execute the above referenced agreement on behalf of the City of Antioch.

\* \* \* \* \*

I HEREBY CERTIFY that the foregoing resolution was passed and adopted by the City Council of the City of Antioch at a regular meeting thereof, held on the 9th day of December, 1980, by the following vote:

AYES: Council Members Pierce, Torlakson, Catanzaro and Mayor Roberts

NOES: Council Member Andrade

ABSENT: None

*Anthony P. Marks*  
CITY CLERK OF THE CITY OF ANTIOCH

City Council Meeting  
December 9, 1980

Excerpt

Item 7 - Resolution adopting a Master Property Tax Transfer Agreement for the Allocation of Property Taxes between the County of Contra Costa and the City of Antioch

RESOLUTION NO. 80/276

It was moved by Council Member Pierce to adopt the foregoing Resolution. Council Member Catanzaro seconded the motion and the vote was as follows:

AYES: Council Members Pierce, Torlakson, Catanzaro and Mayor Roberts

NOES: Council Member Andrade

I, DOROTHY P. MARKS, City Clerk in and for said City of Antioch, County of Contra Costa, State of California, do hereby certify that the foregoing statement is true and correct.

WITNESS, my hand, and Official Seal, this 10th day of December, 1980.

Dorothy P. Marks  
City Clerk, City of Antioch  
Contra Costa County, California



Area 1											
30 Parcels											
PARCEL NO	OWNER NAME	SITE #	STREET	LAND USE DESC	ACRES	PROP. TAX COUNTY *	ASSESSMENT FULL	BLDG SQ FT	Employee	Registered Voters	TRA
051 010 005	UNITED STATES OF	1551	Wilbur Av	GOV-GOV	14.35	0	306,251	0	0	0	53004
051 010 006	KEMWATER NORTH	1805	Wilbur Av	VACANT-IND	2.66	1851	185,115	0	0	0	53004
051 010 007	KEMWATER NORTH	1827	Wilbur Av	IND-HEAVY	0.29	243	24288*	0	0	0	53004
051 010 008	PG&E	0	Wilbur Av	VACANT-IND	6.56	0	0	0	0	0	53004
051 010 009	PG&E	0	Wilbur Av	VACANT-IND	5.59	0	0	0	0	0	53004
051 020 006	GAYLORD CONTAIN	2301	Wilbur Av	IND-HEAVY	27.71	357114	35,711,402	19,200	48	0	53004
051 020 009	IMPERIAL WEST CH	2151	Wilbur Av	IND-HEAVY	3.94	5427	542,651	3,420	9	0	53004
051 020 010	IMPERIAL WEST CH	2105	Wilbur Av	IND-HEAVY	8.86	6120	612,024	0	0	0	53004
051 020 011	KEMWATER NORTH	0	Wilbur Av	VACANT-IND	2.40	1670	167,016	0	0	0	53004
051 020 012	CALIFORNIA STATE	2540	Wilbur Av	GOV-GOV	11.79	0	431,176	0	0	0	53004
051 031 003	CALIFORNIA STATE	0	Wilbur Av	GOV-GOV	0.63	0	3,426	0	0	0	53004
051 031 004	CALIFORNIA STATE	0	Wilbur Av	GOV-GOV	3.21	0	17,423	0	0	0	53004
051 031 005	GAYLORD CONTAIN	2603	Wilbur Av	IND-HEAVY	80.11	91053	9,105,284	0	0	0	53004
051 031 007	CALIFORNIA STATE	0	Wilbur Av	GOV-GOV	3.06	0	16,605	0	0	0	53004
051 031 013	CALIFORNIA STATE	0	*No Site A	GOV-GOV	4.08	0	70,333	0	0	0	53004
051 031 014	SOUTHERN ENERGY	3021	Wilbur Av	IND-HEAVY	147.26	445966	44,596,611	N/A	100	0	53004
051 031 015	PG&E	0	Wilbur Av	IND-HEAVY	21.44	25743	2,574,343	N/A	0	0	53004
051 032 008	PG&E	0	Wilbur Av	VACANT-IND	29.72	0	0	N/A	0	0	53004
051 032 009		2600	Wilbur Av	VACANT-IND	13.35	15097	1,509,730	0	0	0	53004
051 032 011	MARTINEZ	3000	Wilbur Av	VACANT-IND	1.99	3045	304,488	5,834	15	0	53053
051 032 013	CHRIST	3050	Wilbur Av	IND-HEAVY	0.93	2980	297,966	9,750	24	0	53053
051 092 004	ALLISON	2568	Wilbur Av	IND-HEAVY	0.10	363	36,332	599	1	0	53053
051 092 005		2570	Wilbur Av	VACANT-IND	0.30	62	6,191	0	0	0	53053
051 092 010		0	Wilbur Av	LT INDUST	0.25	73	7,277	788	0	0	53053
051 092 012		2540	Wilbur Av	LT INDUST	1.87	1642	164,175	0	0	0	53053
065 020 001	UNITED STATES OF	501	Fulton Sh	GOV-GOV	32.6	0	898,561	0	0	0	53004
065 020 003	UNITED STATES OF	0	Waterfron	GOV-GOV	11.74	0	352,188	0	0	0	53004
065 020 008	CALIFORNIA STATE	0	Waterfron	GOV-GOV	7.49	0	293,494	0	0	0	53004
065 020 009	GP GYPSUM	795	Minaker C	POWER PL	6.16	5470	547,025	N/A	0	0	53004
065 020 010	GYPSUM PLANT	801	Minaker C	IND-HEAVY	30.34	179277	17,927,705	N/A	50	0	53004
TOTALS					480.78	1143196	116,684,792		247	0	
*approximate values											

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Area 2a											
18 Parcels											
PARCEL NO	OWNER NAME	SITE #	SITE STREET	LAND USE DESC	ACRES	PROP. TAX COUNTY	ASSESSMENT FULL	BLDG SQ FT	Employees	Registered Voters	TRA
051 040 001		0	Wilbur Av	Commercial	0.34	5	500	0	0	0	53004
051 040 009	Tommy L & Hampton	480	Fleming Ln	RES-SGL F	0.18	217	21,683	0	0	1	53004
051 040 019		0	Wilbur Av	Commercial	0.93	76	7,586	0	0	0	53004
051 040 023		0	Wilbur Av	Commercial	7.14	5188	518,813	0	0	0	53004
051 040 035	Wallace & Gibson	6325	Bridgehead Rd	REC-BOAT	10.48	20712	2,071,170	0	30	6	53004
051 040 044	CALIFORNIA STATE	0	PO Box 5	GOV-GOV	0.5	130	13,012	0	0	0	53004
051 040 046	Betty Jennings	6321	Bridgehead Rd	MISC-STA	0.82	191	19,060	0	0	0	53004
051 040 047	Wallace & Gibson	0	*No Site	REC-BOAT	0.58	515	51,530	0	0	0	53004
051 040 048	Stephen M Klee	3307	Wilbur Av	REC-BOAT	3	2059	205,897	0	0	11	53004
051 040 049	Stephen M Klee	3305	Wilbur Av	REC-BOAT	4.05	5794	579,420	0	10	5	53004
051 040 056	Anthony & Bulcao	6317	Bridgehead Rd	RES-SGL F	0.38	2500	250,000	0	0	0	53004
051 040 065	SPORTSMEN INC	3301	Wilbur Av	REC-BOAT	7.91	1761	176,137	0	0	1	53004
051 040 066	Jack W & I Mannie Sr.	3665	Wilbur Av	IND-LIGHT	1.13	10276	1,027,608	0	15	0	53004
051 040 069	PACIFIC GAS & ELECTRIC	6301	Bridgehead Rd	MISC-STA	8.37	4497	449,681	0	0	0	53004
051 040 070	Virginia H Fleming	415	Fleming Ln	RES-SGL F	2.5	1376	137,642	0	0	0	53004
051 040 071	PACIFIC GAS & ELECTRIC	0	Wilbur Av	MISC-STA	3.38	3044	304,353	0	0	0	53004
051 040 072	David & St Battaglini	3625	Wilbur Av	IND-LIGHT	5	11982	1,198,231	0	0	1	53004
051 040 073	KIEWIT CONSTRUCTION	3551	Wilbur Av	IND-LIGHT	37.56	18375	1,837,528	0	20	0	53004
		3627	Wilbur Ave							2	
		465	Fleming Ln							1	
		481	Fleming Ln							1	
		6313	Bridgehead Rd							1	
		6525	Bridgehead Rd							1	
TOTALS					94.05	88,698.00	8,869,849.00		75	31	

Area 2b											
117 Parcels											
PARCEL NO	OWNER NAME	SITE #	STREET	LAND USE DESC	ACRES	PROP. TA COUNTY	ASSESSMENT FULL	BLDG SQ FT	Employee	Registered Voters	TRA
051 061 001	Bonnie Lassiter	1650	Viera Ave	RES,2+ SG	0.4	284	28,416	N/A	0	0	53026
051 061 002	W A & C A Critchfield	1700	Viera Ave	RES,2+ SG	0.92	3896	389,641	N/A	0	0	53026
051 061 003	Frankie L Newell	1730	Viera Ave	RES-SING	0.92	1049	104,892	N/A	0	0	53026
051 061 005	PG&E	0	Viera Ave	VACANT	0.6 *	0	0	0	0	0	53026
051 061 006	PG&E	0	Viera Ave	VACANT	0.92	0	0	0	0	0	53026
051 061 007	Dallas F Sexton	0	Viera Ave	COM-RES	0.93 *	3514	351,440	0	0	0	53026
051 062 004	Thaddeus E Sigourney	1839	Stewart L	RES-SING	0.26	1076	107,583	N/A	0	2	53004
051 062 005	Wayne A & Eisenmann	1828	Stewart L	RES-SING	0.29	1042	104,238	N/A	0	2	53004
051 062 006	Marilyn E Placial	1705	Viera Ave	RES-SING	0.42	378	37,776	N/A	0	1	53004
051 062 007	PG&E	0	Viera Ave	VACANT	3.88	0	0	N/A	0	0	53004
051 062 009	PG&E	0	Viera Ave	VACANT	4.34	0	0	N/A	0	0	53004
051 062 010	Robert & Ni Monfort	1853	Stewart L	RES-SING	1.65	1332	133,235	N/A	0	2	53004
051 062 011	PG&E	0	Viera Ave	VACANT	0.59	0	0	N/A	0	0	53004
051 062 012		2555	18TH Str	Commercial	4	6846	684,645	0	10	0	53004
051 071 001	Arthur D & Gonzales J	1524	Viera Ave	RES-SING	0.92	2095	209,497	N/A	0	0	53026
051 071 002	Winston E Lapitan	1550	Viera Ave	RES-SING	0.51	1484	148,373	N/A	0	1	53026
051 071 003	Evan W & R Abbott	1560	Viera Ave	RES-SING	0.41	1285	128,523	N/A	0	1	53026
051 071 004	Floyd P Wharton	1574	Viera Ave	RES-SING	0.46	528	52,790	N/A	0	1	53026
051 071 005	Harvey A Smith	1600	Viera Ave	RES-SING	0.12	525	52,521	N/A	0	0	53026
051 071 006	Kenneth R Turnaga	1606	Viera Ave	RES,2+ SG	0.81	1652	165,194	N/A	0	2	53026
051 071 008	Abdul S & Hussein	1588	Viera Ave	RES-SING	0.46	1907	190,661	N/A	0	0	53026
051 071 011	Mary Tarango	1636	Viera Ave	RES,2+ SG	0.45	574	57,394	N/A	0	1	53026
051 071 012	Jim C & Kai Davis	1628	Viera Ave	RES-SING	0.46	2753	275,345	N/A	0	0	53026
051 072 005	Michael W Gabrielson	1537	Viera Ave	RES-SING	0.46	541	54,064	N/A	0	0	53026
051 072 006	Delbert L Medeiros	1540	Walnut A	RES-SING	0.4	868	86,797	N/A	0	0	53026
051 072 007	Patricia Franzen	1554	Walnut A	RES-SING	0.52	1062	106,182	N/A	0	0	53026
051 072 013	Dale J & Pa White	1549	Viera Ave	RES-SING	0.49	623	62,273	N/A	0	3	53026
051 072 014	Dean & Kim Rogers	1565	Viera Ave	RES,2+ SG	0.87	2081	208,095	N/A	0	1	53026
051 072 015	Gustavo C Maldonado	1863	Bown Ln	RES-SING	0.23	1771	177,084	N/A	0	3	53026
051 072 016	McQuad	1877	Bown Ln	RES-SING	0.23	1245	124,452	N/A	0	3	53026
051 072 017	Helen D Boyer	1568	Walnut A	RES,2+ SG	0.23	714	71,416	N/A	0	1	53026
051 072 018	Juan M Escamilla	1580	Walnut A	RES-SING	0.23	674	67,378	N/A	0	0	53026
051 073 001	James W & Bradshaw	1605	Viera Ave	RES-SING	0.3	417	41,664	N/A	0	1	53004
051 073 002	Myrtle A Smith	1601	Viera Ave	RES-SING	0.22	2750	275,000	N/A	0	0	53004
051 073 003	Esther Holand	1837	Vine Ln	RES-SING	0.21	1013	101,282	N/A	0	2	53004
051 073 004	David J & S Vaughan	1845	Vine Ln	RES-SING	0.21	999	99,855	N/A	0	1	53004
051 073 005	Juan Escan Medina	1859	Vine Ln	RES-SING	0.18	1307	130,682	N/A	0	0	53004
051 073 006	Elgie B & Br Grant	1867	Vine Ln	RES-SING	0.18	2680	268,000	N/A	0	2	53004
051 073 007	Diane C Piper	1881	Vine Ln	RES-SING	0.18	1730	172,961	N/A	0	0	53004
051 073 008	Rebecca Perry	1897	Vine Ln	RES-SING	0.85	1475	147,501	N/A	0	1	53004
051 073 009	Charles E & Mickelson	1905	Vine Ln	RES-SING	0.3	1291	129,147	N/A	0	2	53004
051 073 011	Betty L Green	1965	Vine Ln	RES-SING	0.46	331	33,139	N/A	0	0	53004
051 073 012	Betty L Green	1585	Walnut A	RES,2+ SG	0.86	483	48,317	N/A	0	0	53026
051 073 014	Steven R Brown	1537	Walnut A	RES-SING	0.51	1037	103,729	N/A	0	0	53026
051 073 015	David S & J Delrick	1523	Walnut A	RES-SING	0.35	379	37,860	N/A	0	0	53026
051 073 016	Glenn Hahn	1551	Walnut A	RES-SING	0.39	1636	163,642	N/A	0	0	53026
051 073 017	Kurt A & Ph Loomis	1927	Vine Ln	RES-SING	0.24	1584	158,391	N/A	0	1	53004
051 073 018	Herman M & Nevarez	1945	Vine Ln	RES-SING	0.26	1403	140,323	N/A	0	1	53004
051 073 019	Fred L & An Crabough	1587	Walnut A	RES-SING	0.23	1395	139,539	N/A	0	2	53026
051 073 020	Maria De Je Ramirez	1559	Walnut A	RES-SING	0.23	673	67,330	N/A	0	1	53026
051 074 001	Mary Bishop	1966	Vine Ln	RES-MULT	0.2	1272	127,178	N/A	0	0	53004
051 074 002	Jeff P Prickett	1954	Vine Ln	RES-SING	0.23	401	40,087	N/A	0	0	53004
051 074 003	Phyllis M Austin	1936	Vine Ln	RES,2+ SG	0.44	626	62,524	N/A	0	0	53004
051 074 005	David J & S Vaughan	1898	Vine Ln	RES-SING	0.22	458	45,814	N/A	0	0	53004
051 074 006	David J & S Vaughan	0	Vine Ln	VACANT-R	0.19	229	22,907	N/A	0	0	53004
051 074 007	John Reyes III	1870	Vine Ln	RES-SING	0.22	591	59,065	N/A	0	3	53004
051 074 008	Salvador & Fernandez	1854	Vine Ln	RES-SING	0.38	817	81,731	N/A	0	1	53004
051 074 009	Michael W Bradshaw	1836	Vine Ln	RES-SING	0.29	1870	187,027	N/A	0	0	53004
051 074 010	Della Rayner	1633	Viera Ave	COM-COM	0.53	4020	402,000	0	2	1	53004
051 074 011	Miguel & Cez Diaz	1906	Vine Ln	RES-SING	0.22	861	86,149	N/A	0	0	53004
051 074 012	Glenn A & F Austin	1920	Vine Ln	RES-SING	0.22	350	35,035	N/A	0	2	53004
051 081 001	Filiberto Rodriguez	1400	Viera Ave	RES-SING	0.16	1325	132,476	N/A	0	0	53026
051 081 002	Billie R & Br Lively	1410	Viera Ave	RES-APAR	0.8	474	47,421	N/A	0	1	53026
051 081 003	Paul & Cher Hammond	1428	Viera Ave	RES,2+ SG	0.89	1480	147,958	N/A	0	1	53026
051 081 004	Lisa J Farrer	1452	Viera Ave	RES-SING	0.45	1870	187,027	N/A	0	2	53026
051 081 006	Manuel Lopez	1470	Viera Ave	RES-SING	0.92	570	57,044	N/A	0	1	53026
051 081 007	Janice J Holub	1490	Viera Ave	RES-MULT	0.46	1402	140,224	N/A	0	1	53026
051 081 008	Margaret McWilliams	1500	Viera Ave	RES-MULT	0.92	1961	196,066	N/A	0	7	53026
051 082 002	Arnulfo Villaneda	1497	Walnut A	RES-SING	0.85	1461	146,097	N/A	0	0	53026
051 082 003	John M & B Wadkins	1473	Walnut A	RES,2+ SG	0.43	445	44,518	N/A	0	2	53026
051 082 004	Johnny W & Strawther	1958	Santa Fe	RES-SING	0.55	451	45,059	N/A	0	4	53026
051 082 005	James Oscar Kennard Jr	1915	Santa Fe	RES-SING	0.74	1474	147,393	N/A	0	2	53026
051 082 006	Laurence E Rohrbach	1887	Santa Fe	RES,2+ SG	0.8	1213	121,286	N/A	0	2	53026

051 082 007	Sherry Lee Cameron	1859	Santa Fe	RES-SING	0.45	665	66,474	N/A	0	0	53026
051 082 008	Michael E & Glenn	1831	Santa Fe	RES-SING	0.75	1259	125,863	N/A	0	0	53026
051 082 009	ANTIOCH PAVING CO	1429	Viera Ave	RES-SING	0.76	813	81,284	N/A	0	4	53026
051 082 010	SANDY LANE PROPE	0	Walnut A	VACANT-R	0.42	144	14,443	N/A	0	0	53026
051 082 011	Warren & J Turley	1939	Santa Fe	RES-SING	0.39	335	33,519	N/A	0	0	53026
051 082 012	Sherry Lee Cameron	1859	Santa Fe	VACANT-R	0.39	210	20,986	N/A	0	1	53026
051 082 013	Frank Unpingco	1503	Walnut A	RES-SING	0.38	2067	206,664	N/A	0	5	53026
051 082 014	Rodney B Byrne	1515	Walnut A	RES-SING	0.42	1190	119,042	N/A	0	1	53026
051 083 001	Fred Confetti	1528	Walnut A	RES-SING	0.91	760	76,011	N/A	0	2	53026
051 083 002	Victor Acosta	1506	Walnut A	RES-SING	0.46	1870	187,027	N/A	0	0	53026
051 083 004	Clifford & Jc Crandell	1866	Santa Fe	RES-MULT	1.37	1857	185,714	N/A	0	0	53026
051 083 005	Clifford & Jc Crandell	1834	Santa Fe	RES-SING	0.46	1033	103,344	N/A	0	2	53026
051 083 006	Cecil Clay & Young	1471	Viera Ave	RES-SING	0.46	3107	310,694	N/A	0	0	53026
051 083 009	James Char France	1509	Viera Ave	RES-SING	0.91	1098	109,841	N/A	0	6	53026
051 083 010	Jorge & Yol Pimentel	1487	Viera Ave	RES-SING	0.16	458	45,791	N/A	0	1	53026
051 083 012	Diane C Piper	1495	Viera Ave	RES,2+ SG	0.71	730	72,994	N/A	0	2	53026
051 100 007	PG&E	0		VACANT	4.3	0	0	N/A	0	0	53004
051 100 016	ROMAN CATHOLIC BI	2125	E 18th S	INS-CEME	8.27	323	32,262	N/A	0	0	53004
051 100 018	John & Parr Silva	2201	E 18th S	COM-COM	0.91	472	47,230	N/A	0	2	53004
051 100 022	GAYLORD CONTAINERS	2101	E 18th S	RUR-WITH	8	9279	927,865	0	0	0	53004
051 100 023	GAYLORD CONTAINERS	0	Walbur A	RUR-WITH	0.58	655	65,459	0	0	0	53004
051 120 020	Phyllis Kath Hiebert	1650	Trembath	RES,2+ SG	1.48	749	74,867	N/A	0	2	53004
051 120 021	Norman & K Lescure	1710	Trembath	VACANT-R	1.25	127	12,669	N/A	0	0	53004
051 120 024	Viem & Lien Mai	1450	Trembath	RES-SING	1.01	3293	329,289	N/A	0	3	53004
051 120 025	Mary R Hooper	1550	Trembath	RES-SING	1.02	809	80,938	N/A	0	0	53004
051 130 001	Curtis J & S Hawkinson	1305	Saint Cla	RES-SING	1.01	1903	190,294	N/A	0	2	53004
051 130 002	Antone & M Mitosinka	1277	Saint Cla	RES-SING	1.01	445	44,523	N/A	0	1	53004
051 130 004		0	Trembath	VACANT	5	0	0	0	0	0	53004
051 140 001	Carol A Tokes	1705	Trembath	RES,2+ SG	1.69	2679	267,697	N/A	0	3	53004
051 140 003	Tamara Bonnat	1625	Trembath	RES-SING	1.23	3945	394,470	N/A	0	3	53004
051 140 004	Daniel Louk Upshaw	1575	Trembath	RES,2+ SG	0.75	1459	145,881	N/A	0	0	53004
051 140 005	Daniel Louk Upshaw	0	Trembath	VACANT-R	0.23	127	12,683	N/A	0	0	53004
051 140 006	Kenneth L & Wentworth	1501	Trembath	RES-SING	0.98	3076	307,558	N/A	0	3	53004
051 140 007	John D Shaner	1425	Trembath	RES-SING	0.98	3071	307,114	N/A	0	2	53004
051 140 012	Richard & W Trabold	1613	Saint Cla	RES-SING	1	1577	157,733	N/A	0	1	53004
051 140 013	Carlos & Ot Jimenez	1525	Saint Cla	RES-SING	1	3429	342,883	N/A	0	2	53004
051 140 014	Benjamin M Books	1423	Saint Cla	RES-SING	0.65	1830	182,966	N/A	0	1	53004
051 140 015	Johany Eug Ray	1420	Saint Cla	RES-SING	0.98	2575	257,539	N/A	0	1	53004
051 140 019	Guy & Linda Jones	88	Mike Yor	RES-SING	0.38	445	44,480	N/A	0	2	53004
051 140 020	Charles & F Hernandez	1675	Trembath	RES-SING	0.39	2805	280,541	N/A	0	2	53004
051 140 025	Michael & S Lantrip	1620	Saint Cla	RES-SING	1.1	2140	214,045	N/A	0	2	53004
051 140 026	Donald Alier Burkard	1520	Saint Cla	RES-SING	1.87	3621	362,140	N/A	0	2	53004
051 140 027	Stucker	1651	Saint Cla	RES-SING	0.47	718	71,818	N/A	0	1	53004
051 140 028	Peterson	1715	Saint Cla	RES-SING	0.57	1221	122,076	N/A	0	0	53004
		1405	Saint Claire Dr							1	
		1878	Santa Fe Ave							1	
		1866	Santa Fe Ave							1	
		1690	Trembath Ln							2	
		1706	Viera Ave							2	
		1944	Vine Ln							2	
		1480	Walnut Ave							2	
TOTALS					103.1	160372	16,037,262		12	138	
*approximate values											



## Precinct Index

### E 18th St Antioch 94509

2201	Mrs	Petersen, Ada Antoinette
2201	Mr	Petersen, Chris Arnold

### Bown Ln Antioch 94509

1863	Mr	Crowl, Travis James
1863	Mr	Crowl, Travis James
1863	Ms	Doty, Diane M
1877	Mr	Mc Quaid, Dennis William
1877	Mrs	Mc Quaid, Michele Annette
1877	Mr	Mc Quaid, Patrick W

### Bridgehead Rd Antioch 94509

6313	Mr	Wilmot, Gary Dean
6325	Ms	Brenn, Esta Lee
6325	Mr	Brenn, Lloyd R
6325	Ms	Bryant, Albertine
6325	Mr	Gibson, Richard Edmond
6325 # 529	Mrs	Brenn, Reba Shawn
6325 # F27	Mr	Elledge, Edgar L
6525	Mr	Smith, Odell

### Fleming Ln Antioch 94509

465	Miss	Cranmer, Karen Louise
480	Mr	Linton, Lonnie Lloyd
485	Mr	Sutton, Richard Edwin

### Mike Yorba Way Antioch 94509

88	Mr	Jones, Guy
88	Mrs	Jones, Linda Diane

### Saint Claire Dr Antioch 94509

1277	Mr	Mitosinka, John Charles
1305	Mr	Hawkinson, Curtis James
1305		Hawkinson, Susan Lynn
1405	Mr	Diner, Ralph
1420	Mr	Ray, Johnny Eugene
1423		Books, Connie T
1520	Mr	Burkard, Donald Allen
1520	Mrs	Burkard, Nancy Lee
1525	Mr	Jimenez, Carlos Soto
1525	Ms	Jimenez, Obdulia
1613	Ms	Trabold, Mary A
1620	Mr	Lantrip, Michael Dennis
1620	Mrs	Lantrip, Susan Mary
1651	Mr	Stucker, Thomas W

### Santa Fe Ave Antioch 94509

1834	Mr	Crandell, Clifford Wayne
1834	Mrs	Crandell, Jo Ann
1859		Cameron, Sherry L
1878	Mr	Urrutia, Jonathan Wesley
1886	Mr	Hardie, Hugh E

1887	Ms Bruno, Sharron Ann
1887	Miss Vela, Anna M
1915	Mrs Kennard, Marcllynn
1915	Miss Rohrbacher, Lois
1958	Mr Martinez, Frank Jerry
1958	Mrs Martinez, Justina G
1958	Mrs Strawther, Alice I
1958	Strawther, John W

#### Stewart Ln Antloch 94509

1829	Mrs Eisenmann, Shauna Mae
1829	Mr Eisenmann, Wayne Alan
1839	Ms Court, Kelly Renee
1839	Ms Court, Peggy Lynn
1853	Monfort, Nancy J
1853	Mr Monfort, Robert G

#### Trembath Ln Antioch 94509

1425	Mrs Gonsalves, Patricia Ann
1425	Mr Shaner, John David
1450	Mr Gross, Arthur Ray
1450	Mrs Mai, Lien Kim
1450	Mr Mai, Vien Xuan
1501	Mrs Wentworth, Brenda
1501	Mr Wentworth, Kenneth L
1501	Mrs Wentworth, Martha M
1625	Miss Bonnat, Tamara Mae
1625	Mrs Lawhom, Linda Mae
1625	Mr Lawhom, Paul Byron
1650	Hiebert, Bruce A
1650	Mrs Hiebert, Phyllis T
1660	Mrs Myers, Catherine
1660	Mr Myers, Jerami Andrae
1675	Mr Hernandez, Charles D Jr
1675	Mrs Hernandez, Hsarpaw
1705	Miss Tokes, Barbara Lillian
1705	Tokes, Carol Ann
1705	Mr Tokes, Douglas Eugene

#### Viera Ave Antioch 94509

1410 Apt 3	Ms Colston, June Suzanne
1428	Mr Hammond, Paul Brian
1429	Mr Andelin, Gregory James
1429	Ms Andelin, Lyla Kay
1429	Mr Hayes, Doyle Victor
1429	Mr Hayes, Harold Dustin
1452	Miss Sood, Alberta Grace
1452	Mr Young, Gordon Keef
1470	Mr Lopez, Manuel
1487	Mr Pimentel, Jorge
1490 # A	Negrete, Gloria Jean
1495	Miss Piper, Diane Christine
1495	Mr Thomas, Martin Allen
1500 Apt A	Mr Colley, Michael Todd
1500 Apt A	Mrs Colley, Wanjai Kathleen
1500 Apt A	Miss Diaz, Christina Suzanne
1500 Apt B	Jordon, Ashley Ann
1500 Apt C	Ms Solomon, Sarah Jean

1500 Apt D	Mr	Smith, Kenneth Iain
1500 Apt D	Mrs	Smith, Marsha Ann
1509	Mr	France, James C
1509	Mr	France, Mark Aaron
1509	Mrs	France, Phillis S
1509	Mr	France, Steven Paul
1509	Miss	France, Wendy A
1509	Mrs	Self, Awanda Lee
1549	Mr	Goss, Justin Clyde
1549	Mr	White, Dale J
1549	Mrs	White, Pauline Faith
1550	Mr	Lapitan, Winston Everett
1560	Mr	Abbett, Evan William
1565 Apt B	Mr	Myrick, Rod Lewis
1574	Mr	Duarte, Dominic M
1605	Mr	Vela, Joshua Paul
1606	Mr	Avalos, Michael Sanchez
1606		Hughes, Anna Lorrie
1633	Mr	Rayner, Larry Eugene
1636	Mrs	Navarro, Mary A
1705		Placial, Marilyn Elaine
1706	Miss	Clark, Crystal Dawn
1706	Mr	Sutton, Christopher Wayne

#### Vine Ln Antioch 94509

1837	Mr	Reeves, Jesse Leevone Eugene
1837	Mr	Reeves, Keith Clinton
1845	Mr	Dyer, Cary Wayne Jr
1854	Mr	Fernandez, Salvador Sendiz
1867	Mrs	Roy, Holly Helene
1867	Mr	Roy, Norman Russell Jr
1870	Mr	Reyes, John III
1870	Ms	Reyes, Ruth Holmes
1870	Mr	Waters, Joseph Michael
1897		Perry, Rebecca J
1905	Mr	Mickelson, Charles Edward
1905	Ms	Mickelson, Helen Irene
1920	Mrs	Mc Carty, Cynthia Jean
1920	Mr	Mc Carty, William Douglas
1927	Miss	Loomis, Deanna L
1944	Ms	Twitchel, Donna Marie
1944	Mr	Twitchel, Erik Michael
1945	Ms	Martinez, Regina R

#### Walnut Ave Antioch 94509

1473	Mrs	Wadkins, Beatrice Janey
1473		Wadkins, John M
1480	Mr	Crandell, Anthony Wayne
1480	Mrs	Crandell, Dana Joann
1503	Mrs	Unpingco, Betty Louise
1503		Unpingco, Elizabeth Linann
1503	Miss	Unpingco, Joanna Louise
1503	Miss	Unpingco, Linda Gail
1503		Unpingco, Monica
1515	Mr	Byrne, Rodney Bennett
1528	Mr	Confetti, Dante
1528		Confetti, Jennie T
1559		Ramirez, Maria De Jesus

1567	Mr	Bryant, Anthony Dean
1567	Mrs	Bryant, Elizabeth Rose
1568	Ms	Boyer, Helen D

Wilbur Ave Antioch 94509

3301	Mr	Davidson, Wilmer Wayne
3305	Mr	Chartrand, Lionel V Jr
3305	Mr	Lee, Joseph William
3305		Tovar, Dolores
3305 # 7		Lee, Evonna E
3305 # C47	Mr	Carabetta, Edward N
3307	Mr	Baker, James Charles
3307	Mrs	Lamphear, Olga
3307		Lamphear, Zebulon E
3307	Mr	Quinn, Mark Anthony
3307 Apt 8	Mr	Beckett, David A
3307 # 23	Mr	Palmer, Allan D
3307 # 24	Miss	Brown, Jennifer Lynn
3307 # 24	Mr	Palmer, David
3307 # 33	Mr	Daley, Eugene Belisle
3307 # 41	Mr	Wheelock, Edwin K
3307 Apt 47	Mr	Lamb, Frank Borgia
3625	Mr	Morgan, Allen Donald
3627	Ms	Hayes, Jennifer Lynn
3627	Mr	Villa, Arthur Martin



Northeast Antioch Annexation Feasibility Study  
Revenue Analysis - Base Year - Scenario 1

Appendix E-1

	Budget	capita	Area 1	Area 2A	Area 2B	Total
Property tax - secured	7,784,000	case	\$ 42,007	\$ 3,193	\$ 5,773	\$ 50,973
Property tax - other		case	3,613	275	497	4,384
Franchise tax	2,170,000	p.c. 21.85		1,660	7,389	9,049
Business license tax	1,045,000	case	2,188	1,250	313	3,750
Property transfer tax	641,000	case	10,793	820	1,483	13,097
Sales tax	10,155,000	case	4,936	26,139	5,747	36,822
Sales tax supplement	534,450	p.c. 5.38		409	1,820	2,229
Motor vehicle in-lieu	5,050,000	case		393	1,751	2,145
Miscellaneous permits	90,500	p.c. 0.91		69	308	377
Fines and penalties	216,750	p.c. 2.18		166	738	904
Homeowners property tax relief	90,000	case		6	286	292
Misc service charges	801,000	p.c. 8.07		613	2,727	3,340
Misc revenue	118,000	p.c. 1.19		90	402	492
Transfers	1,294,000	p.c. 13.03		990	4,406	5,396
Gas tax revenue (Gas Tax Fund)		case 36.54		2,775	12,354	15,129
Total revenue	35,703,780		<u>\$ 63,536</u>	<u>\$ 38,848</u>	<u>\$ 45,995</u>	<u>\$ 148,379</u>

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Expenditure Analysis - Base Year - Scenario 1

	Budget	Per Capita	Area 1	Area 2A	Area 2B	Total
General Government	5,556,720	53.51	\$ 3,172	\$ 5,028	\$ 18,247	\$ 26,500
Public Works	6,070,920	58.47	3,466	5,493	19,935	28,953
Police Services	20,487,470	197.30	11,696	18,537	67,276	97,706
Leisure & Community Services	766,870	7.39	438	694	2,518	3,657
Development Services	2,480,560	23.89	1,416	2,244	8,146	11,830
Road Maintenance (Gas Tax Fund)			34,454	15,473	25,789	75,716
Total expenditures	<u>37,577,380</u>		<u>\$54,642</u>	<u>\$ 47,468</u>	<u>\$141,911</u>	<u>\$244,021</u>

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Northeast Antioch Annexation Feasibility Study  
Revenue Analysis - Build-out Year - Scenario 1

Appendix E-3

	Budget	capita	Area 1	Area 2A	Area 2B	Total
Property tax - secured	7,784,000	case	\$ 184,082	\$ 74,701	\$ 20,828	\$ 279,611
Property tax - other		case	15,831	6,424	1,791	24,047
Franchise tax	2,170,000	p.c. 21.85		1,660	7,710	9,370
Business license tax	1,045,000	case	3,189	6,513	370	10,072
Property transfer tax	641,000	case	29,046	10,007	3,418	42,471
Sales tax	10,155,000	case 102.27	31,422	148,397	9,380	189,199
Sales tax supplement	534,450	p.c. 5.38		409	1,899	2,308
Motor vehicle in-lieu	5,050,000	case		4,405	2,383	6,788
Miscellaneous permits	90,500	p.c. 0.91		69	322	391
Fines and penalties	216,750	p.c. 2.18		166	770	936
Homeowners property tax relief	90,000	case		6	297	303
Misc service charges	801,000	p.c. 8.07		613	2,846	3,459
Misc revenue	118,000	p.c. 1.19		90	419	510
Transfers	1,294,000	p.c. 13.03		990	4,598	5,587
Gas tax revenue (Gas Tax Fund)		case 36.54		2,775	12,891	15,667
Total revenue	35,703,780		<u>\$ 263,570</u>	<u>\$ 257,225</u>	<u>\$ 69,921</u>	<u>\$ 590,717</u>

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Expenditure Analysis - Build-out Year - Scenario 1

	Budget	Per capita	Area 1	Area 2A	Area 2B	Total
General Government	5,556,720	53.51	\$ 15,849	\$ 11,411	\$ 20,382	\$ 47,695
Public Works	6,070,920	58.47	17,315	12,467	22,268	52,108
Police Services	20,487,470	197.30	58,433	42,071	75,148	175,850
Leisure & Community Services	766,870	7.39	2,187	1,575	2,813	6,582
Development Services	2,480,560	23.89	7,075	5,094	9,099	21,291
Road Maintenance (Gas Tax Fund)			68,908	15,473	25,789	110,170
Total expenditures	<u>37,577,380</u>		<u>\$ 169,766</u>	<u>\$ 88,090</u>	<u>\$ 155,499</u>	<u>\$ 413,355</u>

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Northeast Antioch Annexation Feasibility Study  
Revenue Analysis - Base Year - Scenario 2

Appendix E-5

	Area 1	Area 2A	Area 2B	Total
Property tax - secured	\$ 42,007	\$ 3,193	\$ 5,773	\$ 50,973
Property tax - other	3,613	275	497	4,384
Franchise tax		983	7,540	8,523
Business license tax	2,188	1,250	313	3,750
Property transfer tax	10,793	820	1,483	13,097
Sales tax	4,936	26,139	5,747	36,822
Sales tax supplement		242	1,857	2,099
Motor vehicle in-lieu		233	1,787	2,020
Miscellaneous permits		41	314	355
Fines and penalties		98	753	851
Homeowners property tax relief		42	320	361
Misc service charges		363	2,783	3,146
Misc revenue		53	410	463
Transfers		586	4,496	5,082
Gas tax revenue (Gas Tax Fund)		1,644	12,606	14,251
Total revenue	<u>\$ 63,536</u>	<u>\$ 35,964</u>	<u>\$ 46,679</u>	<u>\$ 146,179</u>

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Expenditure Analysis - Base Year - Scenario 2

	<u>Area 1</u>	<u>Area 2A</u>	<u>Area 2B</u>	<u>Total</u>
General Government	\$ 6,310	\$ 4,215	\$ 17,933	\$ 28,509
Public Works	6,894	4,605	19,593	31,147
Police Services	23,264	15,541	66,119	105,112
Leisure & Community Services	871	582	2,475	3,934
Development Services	2,817	1,882	8,005	12,727
Road Maintenance (Gas Tax Fund)	34,454	15,473	25,789	75,716
Total expenditures	<u>\$74,609</u>	<u>\$ 42,298</u>	<u>\$139,914</u>	<u>\$256,820</u>

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Northeast Antioch Annexation Feasibility Study  
Revenue Analysis - Build-out Year - Scenario 2

Appendix E-7

	capita	Area 1	Area 2A	Area 2B	Total
Property tax - secured		\$ 184,082	\$ 74,701	\$ 20,828	\$ 279,611
Property tax - other		15,831	6,424	1,791	24,047
Franchise tax	21.85		983	7,540	8,523
Business license tax		3,189	6,513	370	10,072
Property transfer tax		29,046	10,007	3,418	42,471
Sales tax	102.27	55,407	51,553	11,116	118,076
Sales tax supplement	5.38		242	1,857	2,099
Motor vehicle in-lieu			2,610	2,330	4,940
Miscellaneous permits	0.91		41	314	355
Fines and penalties	2.18		98	753	851
Homeowners property tax relief			42	320	361
Misc service charges	8.07		363	2,783	3,146
Misc revenue	1.19		53	410	463
Transfers	13.03		586	4,496	5,082
Gas tax revenue (Gas Tax Fund)	36.54		1,644	12,606	14,251
Total revenue		<u>\$ 287,555</u>	<u>\$ 155,863</u>	<u>\$ 70,932</u>	<u>\$ 514,350</u>

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Expenditure Analysis - Build-out Year - Scenario 2

	<u>Area 1</u>	<u>Area 2A</u>	<u>Area 2B</u>	<u>Total</u>
General Government	\$ 33,018	\$ 17,713	\$ 21,593	\$ 72,377
Public Works	36,073	19,352	23,591	79,074
Police Services	121,735	65,307	79,611	266,851
Leisure & Community Services	4,557	2,445	2,980	9,989
Development Services	14,739	7,907	9,639	32,310
Road Maintenance (Gas Tax Fund)	68,908	15,473	25,789	110,170
Total expenditures	<u>\$279,030</u>	<u>\$128,197</u>	<u>\$163,203</u>	<u>\$570,429</u>

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## **Appendix C**

The Fiscal Impacts of the Northeast Antioch Annexation



**THE FISCAL IMPACTS OF THE NORTHEAST ANTIOCH ANNEXATION**

**A Report To**

**THE CITY OF ANTIOCH**

**From**

**GRUEN GRUEN + ASSOCIATES**

*Urban Economists, Market Strategists & Land Use/Public Policy Analysts*

**In Association With**

**CARLSON, BARBEE & GIBSON, INC.**

*Civil Engineers, Surveyors & Planners*

**C1247**

**January 2009**

**THE FISCAL IMPACTS OF THE NORTHEAST ANTIOCH ANNEXATION**

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**C1247**

**January 2009**

*APPLYING KNOWLEDGE  
CREATING RESULTS  
ADDING VALUE*



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## CHAPTER I

### INTRODUCTION, METHODOLOGY AND STUDY AREA CHARACTERISTICS

#### INTRODUCTION AND PURPOSE

The City of Antioch asked Gruen Gruen + Associates (“GG+A”) to evaluate the potential fiscal impacts of annexation of three areas in Contra Costa County northeast of the current municipal boundaries of Antioch. The “Northeast Antioch annexation area” has been within the City of Antioch’s sphere of influence for over 30 years. Following development of a strategic plan for the annexation, in 2007, the City Council authorized the initiation of the annexation of approximately 500 acres of industrial land on the north and south sides of Wilbur Avenue. The Pacific Gas and Electric Gateway Generating Station (“PG&E Generating Station”) is under construction in this industrial area which is depicted in Map I-1 and described further in Table I-1 below as “Area 1”.

A wholly-owned subsidiary of the merchant power producer Mirant Corporation (“Mirant”) has requested the annexation of land adjoining the PG&E Generating Station into the City of Antioch and the provision of water service by Antioch to a 930-MW power plant Mirant proposes to construct, own, and operate. City staff have prepared much of the analysis and documentation required to complete an annexation application to LAFCO. To complete the application requires the preparation and execution of an agreement with Contra Costa County about the allocation of tax revenues applicable to the annexation area between the City and County.

County representatives have proposed a conceptual agreement under which the County would relinquish the rights to collect certain tax revenue that would otherwise in the absence of the annexation accrue to the County if the City also agrees to annex a residential area described below as “Area 2b”. Area 2b contains potentially health-threatening infrastructure deficiencies, including the presence of failing septic fields and water wells. In addition, County representatives have proposed also conditioning the annexation of Area 1 into the City upon the annexation of an area described further below and referred to as “Area 2a”. Area 2a includes a mix of industrial and residential uses to which the County is constrained in providing services because of the relative distance of Area 2a from other County areas. Area 2a is also affected by infrastructure deficiencies.

An interview with the Executive Director of LAFCO confirms LAFCO’s preferred policy of a single annexation of Area 1, Area 2a, and Area 2b. Accordingly, an information base about the potential fiscal ramifications of the conceptual proposal is needed to provide a framework for the negotiation of an agreement for the allocation of tax revenues from the annexation of Area 1, Area 2a, and Area 2b into the City of Antioch. Therefore, in order to assist the municipal representatives responsible for making prudent decisions about the proposed annexation, GG+A was asked to prepare a forecast of the



## THE FISCAL IMPACTS OF THE NORTHEAST ANTIOCH ANNEXATION

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likely costs to the City of Antioch resulting from the annexation and the revenues likely to flow into the City's General Fund after the annexation. A comparison of the forecast of annual revenues and costs estimated to be induced by the annexation are made to present an estimate of the potential net balance between revenues and costs resulting from the proposed annexation.

### DESCRIPTION OF AREA 1, AREA 2a, AND AREA 2b

Map I-1 shows the location of Area 1, Area 2a, and Area 2b.

MAP I-1

Depiction of Area 1, Area 2a, and Area 2b Comprising the Annexation Area

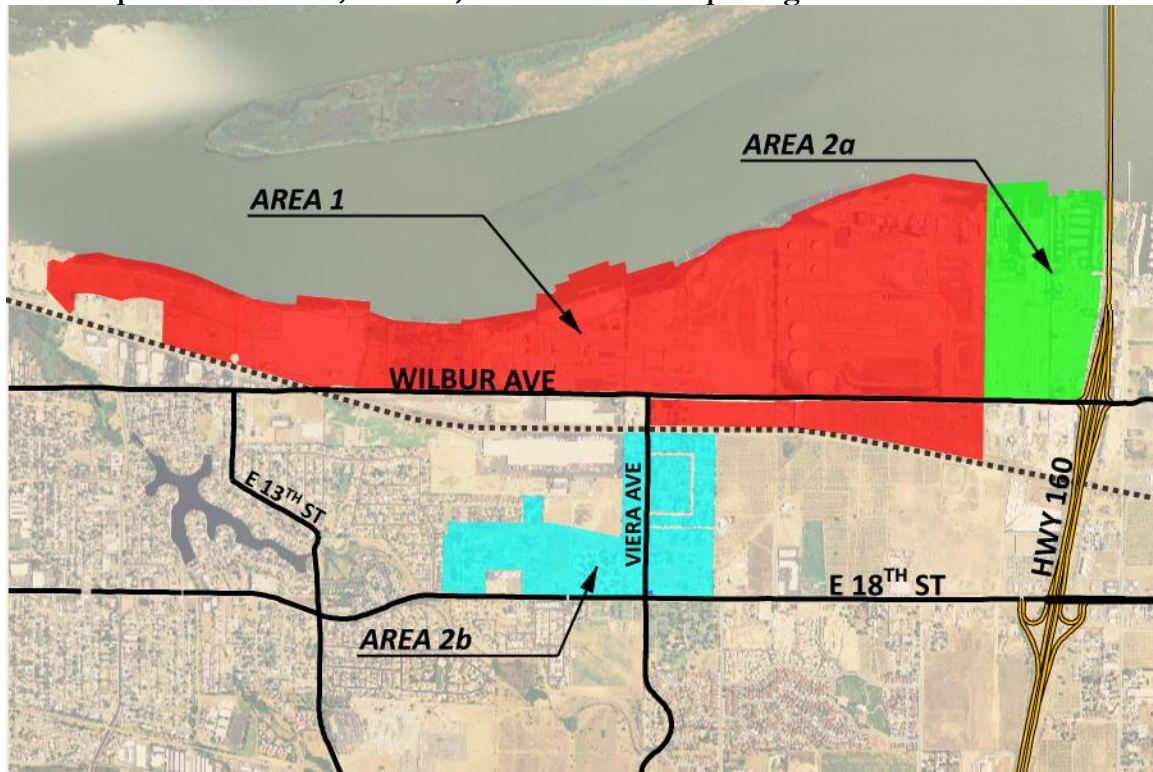


Table I-1 summarizes the current land use, demographic, employment, and assessed valuation characteristics of Area 1, Area 2a, and Area 2b.



## THE FISCAL IMPACTS OF THE NORTHEAST ANTIOCH ANNEXATION

**TABLE I-1**

**Current Characteristics of Northeast Antioch Annexation Area**

	Area 1	Area 2a	Area 2b	Total
Total Land (# Acres)	388.934 <sup>1</sup>	93.55	101.7	584.184
Vacant Land (# Acres)	168.27	0	19.04	187.31
Existing Building Space (# Square Feet.)	213,269	100,180	7,949	321,398
Number of Employees <sup>2</sup>	176	105	16	297
Number of Households	0	3	90	93
Number of Residents	0	9	264	273
Number of Resident Equivalents <sup>3</sup>	88	62	272	422
2008 Assessed Valuation	\$421,286,455	\$11,664,541	\$20,234,588	\$453,185,584
<sup>1</sup> Federal and state owned non-taxable land in proposed annexation Area 1 total 88.95 acres and is not included in the 388.934 acres figure.				
<sup>2</sup> Employment estimates for Area 1 are based on discussions with businesses in Area 1; and employment estimates in Area 2a are based on discussions with businesses in Area 2a and the assumption of one employee per 1,000 square feet of building space. Employment estimates in Area 2b reflect the assumption of one employee per 500 square feet of building space because the space in Area 2b is commercial in nature.				
<sup>3</sup> Assumes municipal revenues and costs generated by every two employees equal that of one resident.				
Sources: Contra Costa County Assessor; PG&E; Mirant Delta LLC; Kiewit Construction; Monterey Mechanical; Gruen Gruen + Associates.				

Area 1 is located on Wilbur Avenue from the PG&E Generating Station west to Antioch Dunes National Wildlife Refuge. Area 2a is located north of Wilbur Avenue and east of the PG&E Generating Station and to the immediate north of the existing boundary of the City of Antioch. Area 2b is located north of East 18<sup>th</sup> Street and south of Wilbur Avenue.

Area 1 consists of approximately 389 acres of land of which approximately 168 acres of land are vacant. Area 1 includes approximately 213,000 square feet of non power plant building space. Area 1 is estimated to contain 176 jobs. Employers in this area include the Mirant Contra Costa Power Plant, an existing power plant owned and operated by Mirant Delta; PG&E which is currently constructing the PG&E Generating Station, a new generation facility; and Georgia Pacific, a major gypsum product manufacturer.

Area 2a consists of nearly 94 acres of build-out land. Area 2a contains approximately 100,000 square feet of building space and 105 jobs as well as three households. Kiewit Construction and Monterey Mechanical Company, an industrial contractor and metal fabricator, as well as Antioch Storage & Trailer and the Sportsmen Yacht Club, comprise the major users in the area.

Area 2b consists of approximately 102 acres of land. Approximately 19 acres of land in Area 2b is vacant because it is PG&E right-of-way. Area 2b includes approximately 7,900 square feet of nonresidential building space and 90 older single-family housing units in neighborhoods along Viera Avenue and Trembath/Lipton Lanes. Area 2b is estimated to



contain 16 jobs and 294 residents. The area is served by served private water wells and septic systems.

With an assessed valuation in 2008 of approximately \$421.3 million, the assessed valuation of Area 1 comprises 95 percent of the total assessed valuation of the three areas. The 2008 assessed valuation of Area 2a totals \$11.7 million and the assessed valuation of Area 2b totals \$20.2 million.

### DESCRIPTION OF CURRENT INFRASTRUCTURE CONDITIONS

Carlson, Barbee & Gibson, Inc. completed a review of the infrastructure conditions of the Northeast Antioch annexation area and has also estimated the costs of bringing the infrastructure up to the City of Antioch standards. The following summarizes the current infrastructure conditions.

Area 1 consists of three existing streets of varying levels of service. Wilbur Avenue is an arterial roadway that connects the City of Antioch to Highway 160 just south of the John Nejedly Bridge. The existing road consists of two 12-14' lanes with an intermittent median. Approximately 0.85 miles of this road are within the Northeast Antioch annexation area. However, in the build-out condition approximately two miles of roadway, from the Santa Fe railroad overpass to the Highway 160 interchange, would need additional infrastructure improvements in order to provide utility service to each parcel within the annexation area and to comply with current City standards.

Existing utilities in Wilbur Avenue include a 12" waterline, a 36" storm drain line constructed in a portion of the road, a 15" sanitary sewer line recently constructed to provide service to the PG&E parcel, a regional Delta Diablo Sanitation District sewer force main, and electrical power lines.

Minnaker Avenue is an industrial cul-de-sac north of its intersection with Wilbur Avenue. Approximately 130 feet of Minnaker Avenue is within the annexation area. Existing utilities in Minnaker Avenue include a sewer line, storm drain line, and a power line for a portion of the road.

Viera Avenue from its intersection with Wilbur Avenue to the northern right of way of the Santa Fe railroad crossing is also within Area 1; the remainder of Viera Avenue is in Area 2B. Viera Avenue is a residential collector street that connects East 18<sup>th</sup> Street to Wilbur Avenue. Approximately 340 feet of this road is within Area 1. Existing utilities in Viera Avenue include a 16" water line and electrical power lines.

Area 2A consists of two residential streets that have a total length of 0.46 miles, Fleming Lane and Bridgehead Road. Fleming lane is a narrow road with existing building structures close to the existing pavement. There is an existing power line on the east side of the street. There are no other utilities in this street. There is an existing 6" water line in Bridgehead





Road.

Area 2B consists of five paved streets and four dirt roads that combine for a total length of 1.6 miles. The existing utilities in this area consist of electrical power lines, a 16" water line in Viera Avenue, and a storm drain line in Trembath Lane.

The existing infrastructure in each area would require significant improvements to conform to the City of Antioch standards, such as:

- Widen existing roads – requires additional right of way;
- Remove and replace existing pavement section;
- Construct curb, gutter, and sidewalk;
- Connect additional water lines;
- Install sewer mains and manholes;
- Install water and sewer laterals to each parcel;
- Construct storm drain improvements, manholes, and catch basins; and
- Relocate existing electrical utilities.

### METHODOLOGY

The analysis and resulting estimates of the dollars likely to flow into and out of Antioch's General Fund as the result of the proposed annexation focuses on the recurring rather than one-time, short-run fiscal effects of the potential annexation. Therefore, this analysis excludes all short-run fiscal impacts associated with the process of development. In other words, permit, plan checking, building inspection and other development process fees are assumed to be set at rates that will offset service costs. The estimates of the revenues and costs likely to be associated with the completion of the annexation reflect the review and analysis of data and information obtained from a variety of sources including the City Manager of Antioch as well Antioch's Finance Director, Public Works Director, Community Development Director, Economic Development Director, and the Support Services Captain of the Police Department. Additional sources included members of the real estate brokerage firm Colliers International, and representatives of PG&E, Mirant, Georgia Pacific, Kiewit Construction, Monterey Mechanical and representatives of the City of Pittsburg, California State Board of Equalization, Contra Costa County Assessor's Office, and LAFCO.

Analysis of the Budget and interviews and reviews of secondary sources provided information and insight used to estimate the demand for municipal services and the costs of providing services to the residents and businesses occupying property in Area 1, Area 2a, and Area 2b as well as the revenues resulting from the annexation. In estimating General Fund revenues, we have assumed that the current Antioch tax and fee structures remain constant. If the average costs and revenues to be generated by new businesses or residents occupying property in the Northeast Antioch annexation area are estimated to be similar to those generated by existing businesses or residents such as sales taxes, penalties, motor vehicle in-lieu taxes, such items are estimated on an average per capita, or household, or



other basis. The specific methodologies used to estimate each cost and revenue items are reviewed in the appropriate section of this report.

To consider the implications of varying alternatives on how the City and County could potentially share in property tax receipts after annexation, we prepared estimates of property tax revenue based on two alternative assumptions: (1) the rates that would apply as if Area 1, Area 2a, and Area 2b were already within the City's jurisdiction; and (2) the rates that would apply as if the "1980 Master Property Tax Transfer Agreement for Allocation of Property Tax Between the County of Contra Costa and City of Antioch Upon Jurisdictional Changes" (the "Master Property Tax Agreement") governed the annexation. We also have modeled the allocation of sales and franchise taxes under the assumption that the County would obtain such taxes as the allocation was made under the "Agreement for Allocation of Tax Revenues Between the County of Contra Costa and the City of Pittsburg for the Mirant Power Plant Annexation Area". We also modeled an alternative in which the City would collect sales and franchise taxes as if Area 1, Area 21, and Area 2b were already within the City's jurisdiction.

We compared the estimated annual revenues and annual operating costs associated with the annexation and occupancy of property in Area 1, Area 2a, and Area 2b following annexation and at the full build-out of the proposed annexation area in the future. We then compared the estimated net annual operating revenues potentially resulting from the annexation to the estimated annual costs of financing the capital facilities identified as needed to cure infrastructure deficiencies and bring up the infrastructure in the proposed annexation area to City standards.

As a condition of annexation, the City of Antioch will need to provide levels of service to the Northeast Antioch annexation area equivalent to the current levels of services provided to areas already incorporated into the City. To conform with the City standards require a significant improvement in the levels and quality of capital facilities and ongoing municipal services provision. This basic requirement underlies the assumptions used to forecast the costs and revenues likely to result from the proposed annexation in order to determine the positive or negative fiscal effect of the annexation on the General Fund of the City of Antioch.

All cost and revenue projections in this report are expressed in constant 2008 dollars. That is, the possible effects of inflation or deflation on both municipal revenues and costs are ignored.



## ANNEXATION AREA CHARACTERISTICS AND DEMOGRAPHIC AND ECONOMIC PROFILE

### Demographic and Economic Profile and Baseline Assumptions

Table I-2 shows the present demographic and economic data for Antioch based on which those revenue and expenditure projections that cannot be directly allocated to a specific business or other source are estimated.

TABLE I-2	
Population, Households, and Employment in the City of Antioch: 2008	
	#
Population	100,361
Households	33,059
Average Persons Per Household	3.04
Estimated Total Jobs in Antioch <sup>1</sup>	21,270
Estimated Total Resident Equivalents <sup>2</sup>	110,996
<sup>1</sup> Association of Bay Area Governments estimate for 2005.	
<sup>2</sup> Assumes that two employees generates the same revenues or costs as one resident. Resident equivalents equals $100,361 + 21,270/2 = 110,996$ .	
Sources: California Department of Finance; City of Antioch; Association of Bay Area Governments; Gruen Gruen + Associates.	

The population of Antioch is estimated at 100,361. The number of households is estimated at 33,059. The number of total jobs is estimated to be 21,270. As described in more detail in the individual sections summarizing the revenue and cost estimates by category, we use the estimates for population and employment to create per capita and related metrics for categories of current City costs and revenues and extrapolate these “service unit” measures to the additional service units estimated to be associated with the Northeast Antioch annexation area. A frequently used service unit measure is referred to as “resident equivalents”. This measure is used to evaluate certain revenues and costs because workers in Antioch in addition to residents add to municipal revenues and the demand for municipal services. For purposes of this analysis, total resident equivalents are a function of the total residential population in Antioch plus one-half of the employment in Antioch which results in a total resident equivalent service base of 110,996.

### REPORT ORGANIZATION

Chapter II presents a description of the present characteristics of the annexation area and a forecast of potential land use, population, employment and related conditions when the Northeast Antioch annexation area is fully developed. Chapter III presents estimates of the annual revenues the City of Antioch is estimated to collect from the annexation area after the annexation and in the future when the area is assumed to be fully built-out. Chapter IV presents estimates of the annual costs of providing municipal services to Area 1, Area 2a,



and Area 2b after the annexation is completed and in the built-out condition of the annexation area. Chapter V presents a comparison of the estimated annual revenues with the annual operating costs following the annexation of Area 1, Area 2a, and Area 2b and at the built-out condition of the annexation area in the future. Chapter VI presents a review of the capital facilities estimated to be required to bring the proposed annexation area into conformance with City standards. Chapter VI also presents the estimated costs to install the required capital facilities. Chapter VII presents an analysis of the potential annual costs to finance the construction of the necessary improvements. A comparison is made to the estimated net operating revenue to identify the potential net fiscal effect on the treasury of the City of Antioch.



**CHAPTER II****PRESENT AND FORECAST CONDITIONS OF  
THE NORTHEAST ANTIOCH ANNEXATION AREA****CURRENT LAND USE, DEMOGRAPHIC, AND EMPLOYMENT  
CHARACTERISTICS OF NORTHEAST ANTIOCH ANNEXATION AREA**

The forecasts of annual revenues and costs to the General Fund of the City of Antioch following the annexation of Area 1, Area 2a, and Area 2b draw on the land use, demographic and employment characteristics summarized in the following tables. Table II-1 presents the current characteristics of Area 1.

<b>TABLE II-1</b>				
<b>Current Land Use, Demographic, and Employment Characteristics and Assessed Value for Area 1 in Northeast Antioch Annexation Area</b>				
Built Space	Amount of Land # Acres	Building Space # Square Feet	Number of Employees #	2008 Assessed Valuation \$
Georgia Pacific	36.5	196,000	97	22,965,078
PG&E Gateway Generating Station	21.44	N/A	21.5	350,000,000
Mirant Contra Costa	147.26	N/A	40	34,135,351
Other Industrial	15.11	17,269	17	2,701,225
Residential	0.35		N/A	47,193
Total Built	220.66	213,269	176	409,848,847
<i>Vacant Land (Taxable)</i>				
Land North of Wilbur Avenue <sup>1</sup>	138.25	0	0	11,430,909
Land South of Wilbur Avenue <sup>1</sup>	29.72	0	0	N/A
Other Industrial Land	0.30	0	0	6,699
Total Vacant	168.27	0	0	11,437,608
Total	388.93	213,269	176	421,286,455
<sup>1</sup> PG&E land included in acreage is assessed by State of California Board of Equalization and is not included in total 2008 assessed valuation.				
Sources: Contra Costa County Assessor; 2000 Census; Gruen Gruen + Associates.				

Area 1 includes developed land of approximately 221 acres with 213,000 square feet of building space, primary due to the Georgia Pacific plant. The PG&E Generating Station under development with an expected completion date of January 2009 is in Area 1 as is the existing Mirant Contra Costa plant. Approximately 168 acres of land is vacant. The PG&E Generating Station at \$350 million comprises much of the assessed valuation. The other





## THE FISCAL IMPACTS OF THE NORTHEAST ANTIOCH ANNEXATION

major sources of assessed valuation are the Georgia Pacific Plant (almost \$23 million) and the Mirant Contra Costa plant (currently approximately \$34 million). While Area 1 has a very small amount of land zoned for residential use, no households presently live in the area. The businesses in Area 1 are estimated to provide jobs for 176 workers.

Table II-2 presents the current characteristics of Area 2a.

<b>TABLE II-2</b>				
<b>Current Land Use, Demographic, and Employment Characteristics and Assessed Value for Area 2a in Northeast Antioch Annexation Area</b>				
Built Space	Amount of Land # Acres	Building Space # Square Feet	Number of Employees or Residents #	2008 Assessed Valuation \$
Light Industrial <sup>1</sup>	56.06	95,035	95	7,170,637
Commercial Boat Harbors	34.43	5,145	10	4,051,248
Residential	3.06	0	9	442,656
Total	93.55	100,180	105 employees 9 residents	11,664,541
<sup>1</sup> Includes Kiewit Construction and Monterey Mechanical, which together occupy 82,000 square feet of space and employee 82 workers.				
Sources: Contra Costa County Assessor; 2000 Census; Gruen Gruen + Associates.				

Area 2a includes a light industrial and boat harbor area of approximately 56 acres and 34 acres of land, respectively. The light industrial area contains approximately 95,000 square feet of building space associated primarily with the operations of Kiewit Construction and Monterey Mechanical. Area 2a employers provide jobs for an estimated 105 workers. Included in Area 2a is approximately three acres of residentially-zoned land.



## THE FISCAL IMPACTS OF THE NORTHEAST ANTIOCH ANNEXATION

Table II-3 presents the current characteristics of Area 2b.

<b>TABLE II-3</b>				
<b>Current Land Use, Demographic, and Employment Characteristics and Assessed Value for Area 2b in Northeast Antioch Annexation Area</b>				
Built Space	Amount of Land # Acres	Building Space # Square Feet	Number of Employees or Residents #	2008 Assessed Valuation \$
Single-family and Multi-family Residential <sup>1</sup>	59.25	90	264	17,762,858
Commercial <sup>2</sup>	6.56	7,949	16	1,604,491
Industrial	8.58	0	0	832,319
Institutional	8.27	0	0	34,920
PG&E Land <sup>3</sup>	19.04	0	0	N/A
Total	101.70	7,949 square feet 90 households	16 employees 264 residents	20,234,588
<sup>1</sup> Number of residents is based on 2000 Census data.				
<sup>2</sup> Employment in Area 2b is based on assumption of one employee per 500 square feet of commercial space.				
<sup>3</sup> PG&E land is assessed by State of California Board of Equalization and is not included in total 2008 assessed valuation.				
Sources: Contra Costa County Assessor; 2000 Census; Gruen Gruen + Associates.				

Area 2b consists of approximately 102 acres of land. Approximately 59 acres of land includes primarily residential uses and 264 residents. The properties have an assessed valuation of \$17.8 million. Area 2b includes relatively small amounts of commercial, industrial, and institutional land with relatively low assessed valuations and 19 acres of vacant PG&E land parcels used for right-of-way.

### LAND USE, DEMOGRAPHIC, AND EMPLOYMENT CHARACTERISTICS OF NORTHEAST ANTIOCH ANNEXATION AREA FORECAST AT THE BUILD-OUT CONDITION IN THE FUTURE

Table II-4 summarizes the estimated land use, demographic and employment characteristics of the Northeast Antioch annexation area when the area is fully built-out in the future. Appendix A presents detailed tables summarizing the forecast of conditions when Areas 1 and 2a are fully built-out in the future. Area 2b is assumed to not change. Based on information from the Community Development Department, the existing zoning is assumed to be “grandfathered in” and essentially preserve the existing development pattern patterns and uses. The forecast of future Antioch General Fund revenues and costs induced by the annexation of Area 1, Area 2a, and Area 2b reflect the assumptions about the future characteristics of the proposed Northeast Antioch annexation area.



## THE FISCAL IMPACTS OF THE NORTHEAST ANTIOCH ANNEXATION

**TABLE II-4**

<b>Forecast Northeast Antioch Annexation Area Conditions at Full Build-out in the Future</b>				
	Area 1	Area 2a	Area 2b	Total
Total Land (# acres)	388.934 <sup>1</sup>	93.55	101.7	584.184
Vacant Land (# acres)	0.3	0	19.04	19.34
Building Space (# s.f.)	2,171,923	772,597	7,949	2,952,469
Number of Employees <sup>2</sup>	1,855	1,529	16	3,400
Number of Households	0	3	90	93
Number of Residents	0	9	264	273
Number of Resident Equivalents <sup>3</sup>	927	774	272	1,973
Future Assessed Valuation	\$1,418,655,614	\$158,240,881	\$20,234,588	\$1,597,131,083
<sup>1</sup> Federal and state owned non-taxable land in proposed annexation Area 1 total 88.95 acres and is not included in the 388.934 figure. <sup>2</sup> Employment estimates for Area 1 are based on discussions with businesses in area; employment estimates for Area 2a are based on discussions with businesses in area and the assumption of one employee per 1,000 square feet of building space for existing space, and two employees per 1,000 square feet for redeveloped space. Employment estimates for Area 2b are based on the assumption of one employee per 500 square feet of building space because space is commercial in nature. <sup>3</sup> Assumes municipal revenues and costs generated by every two employees equal that of one resident.				
Sources: City of Antioch; Contra Costa County Assessor; 2000 Census; Colliers International; Gruen Gruen + Associates.				

The 168 acres of land both north and south of Wilbur Avenue in Area 1 is assumed to be redeveloped into industrial and warehouse uses. Based on discussions with local real estate brokers and the Director of Economic Development for Antioch, the vacant land north of Wilbur Avenue, which includes the former Kemwater 18-acre site, the 107.82 acres owned by Forestar Real Estate Group (the former Temple Inland site), and approximately 12 acres owned by PG&E, is likely to be developed with heavy industrial uses. Assuming a floor-area ratio of 0.25 for heavy industrial uses results in an estimate of building space at build-out of 1.5 million square feet. The resulting employment of 753 workers is based on the assumption of ½ worker per 1,000 square feet of building space. Heavy industrial space is expected to be constructed at a cost of \$80 per square foot resulting in total added assessed value of \$120.4 million.

PG&E owns approximately 30 acres of vacant land south of Wilbur Avenue in Area 1. Based on discussions with local real estate brokers and the Director of Economic Development for Antioch, the vacant land is anticipated to be developed in the future with multi-tenant light industrial uses. Assuming a floor-area ratio of 0.35 for light industrial uses results in an estimate of potential building area of over 450,000 square feet of space. The resulting employment estimate of 906 workers is based on the assumption of two workers per 1,000 square feet of building space. Light industrial space is expected to be constructed at a total cost of \$195 per square foot resulting in total added assessed value of \$88.4 million.



Mirant has filed an application seeking approval to build a new power plant, Marsh Landing, within its existing Mirant Contra Costa facility in Area 1. The value of the construction improvements is estimated to total \$800 million. According to a Mirant representative, the drycooled units will come on line in summer 2011, and the combined cycle units will come on line in summer 2012. Construction is expected to take 33 months. Once complete, the new Mirant plant will employ 20 full-time workers

Under the assumptions outlined above about the potential future build-out of Area 1, 1,679 new workers will be employed and nearly two million square feet of new industrial space (excluding the new Mirant plant) would be developed. Under this build-out scenario, the future assessed value of Area 1 will increase by \$997.4 million to nearly \$1.4 billion.

Within Area 2a, approximately 53 acres land is assumed to be redeveloped into industrial/warehouse uses. The redevelopment in Area 2a is assumed to occur for the approximately 38-acre Kiewit Construction property, much of which is presently used for outdoor equipment storage, and the approximately 15-acre Antioch Trailer Storage property. Development of these two properties is assumed to add approximately 670,000 square feet of industrial space and over 1,400 new workers. This scale of redevelopment and employment growth assumes a floor-area ratio of 0.35 and two workers for every 1,000 square feet of building space. The construction of the new space of approximately 670,000 square feet is assumed to be built at a total cost of \$195 per square foot of building space. Under this build-out scenario, the assessed value of Area 2a is forecast to increase by \$146.6 million to an assessed value of \$158.2 million.

Note that according to data from the Colliers International 3<sup>rd</sup> Quarter 2008 Industrial Market Report, Antioch currently contains approximately 3.3 million square feet of industrial space. Approximately 736,000 square feet or 22 percent of the industrial space inventory is vacant. The interviews suggest that the East 18th Street Specific Plan Area south of Area 1 represents another location for industrial space users in Antioch. The availability of deep water access and docks, significant contiguous land, and the potential for a stream-lined permitting process for heavy industrial users are comparative advantages that can be capitalized upon. In the near term, however, the most assured revenue-generating sources for the Antioch General Fund are the PG&E Generating Plant and the proposed Mirant plant. Accordingly, the analysis also identifies whether the revenue from these two uses in Area 1 would be sufficient to offset the costs of providing services to Areas 2a and 2b.



**CHAPTER III**

**ESTIMATED REVENUES GENERATED BY  
THE COMPLETION OF THE PROPOSED NORTHEAST  
ANTIOCH ANNEXATION FOR THE CITY OF ANTIOCH**

**INTRODUCTION**

This chapter presents estimates of the revenues that annexation of Area 1, Area 2a and Area 2b may generate for the City of Antioch through property taxes and other revenue sources, including property transfer tax, sales and use tax, franchise taxes, penalties, business license tax, and intergovernmental transfers.

Gas taxes are the only non-General Fund revenue item included in this analysis. We estimate gas taxes because funds from the as tax are transferred unto the General Fund and are used to cover the costs of street maintenance.

**SUMMARY OF ESTIMATED GENERAL FUND  
REVENUES FOLLOWING ANNEXATION AND AT  
THE FULL BUILD-OUT OF THE NORTHEAST ANTIOCH AREA**

Table III-1 summarizes the estimated municipal General Fund revenue potentially generated following completion of the proposed annexation and at the full built-out condition of Area 1, Area 2a, and Area 2b, assuming all of the estimated sales tax revenue and franchise fee revenue is allocated to the City. For this analysis, the Mirant plant is assumed to come on line and on the tax rolls after the completion of the proposed annexation. The Mirant plant is factored into the build-out condition scenario.





## THE FISCAL IMPACTS OF THE NORTHEAST ANTIOCH ANNEXATION

TABLE III-1						
Summary by Area of Estimated Annual General Fund Revenue to the City of Antioch Assuming the City Receives All of the Sales Tax Revenue and Franchise Fee Revenue						
	Estimated Annual Revenue Following Annexation \$			Estimated Annual Revenue At Built-Out Condition \$		
	Area 1	Area 2a	Area 2b	Area1	Area 2a	Area 2b
Property Tax <sup>1</sup>	152,055- 412,814	4,211 – 11,431	7,304 – 19,830	870,163- 1,390,236	106,709- 155,076	7,304 - 19,830
Property Transfer Tax	2,043	642	1,113	12,899	8,703	1,113
Sales and Use Tax	546	0	0	43,654	37,035	0
Sales and Use Tax – Public Safety Allocation	52	0	0	4,160	3,554	0
Franchise Fee Tax	63,050	15,190	5,538	585,550	115,690	5,538
Penalties	174	122	539	1,838	1,534	539
Business License Tax	18,000	N/A	N/A	18,000+	N/A	N/A
Motor Vehicle In-Lieu Fees	0	54	1,578	0	54	1,578
Gas Tax	0	46	1,342	0	46	1,342
Total by Area	235,920- 496,679	20,265- 27,485	17,414- 29,940	1,536,264- 2,056,337	273,325- 321,638	17,414- 29,940
Total Area 1, Area 2a and Area 2b	273,326-554,104			1,827,003-2,407,915		
<sup>1</sup> Range based on minimum property tax to City of Antioch using 3.61% tax rate based on current master tax agreement for property in base year and 7.2% tax rate for additional property in build-out year and maximum property tax to City of Antioch using 9.8% tax rate as if property is in City limit.						
Sources: City of Antioch; Gruen Gruen + Associates.						

Overall, the completion of the annexation Area 1, Area 2a, and Area 2b is estimated to contribute total annual revenues to the Antioch General Fund of \$273,000 to \$554,000 and \$1.8 million to \$2.4 million when the Northeast Antioch annexation area is fully built-out in the future. Taxes and fees associated with the proposed Mirant Plant and PG&E Generating Station are estimated to generate a total of \$725,000 to \$1.1 million or 41 to 49 percent of total revenue resulting from the annexation.

Following the completion of the proposed annexation, Area 1 is estimated to account for \$235,900 to \$496,700 or 86 to 90 percent of the total revenue generated by the annexation of the Northeast Antioch area. Area 2a is estimated to account for \$20,300 to \$27,500 or five to seven percent of the total revenue generated by the annexation while Area 2b is estimated to account for \$17,400 to \$30,000 of the total revenue of \$273,300 to \$554,100 generated by the annexation. Property tax revenue of \$163,600 to \$444,000 is estimated to comprise 60 to 80 percent of the total revenue from the completion of the annexation. The PG&E Generating Station is estimated to generate total annual revenues of approximately \$150,000



## THE FISCAL IMPACTS OF THE NORTHEAST ANTIOCH ANNEXATION

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to \$365,000 or 55 to 66 percent of the estimated total revenues upon completion of the annexation, depending on the allocation of the revenues between the City and the County.

Area 1 is estimated to account for \$1.5 million to \$2.0 million or 85 percent of the total revenue generated by the annexation when the Northeast Antioch annexation area is fully built-out. Area 2a is estimated to account of \$273,300 to \$321,600 or 14 percent of the total revenue generated by the annexation when the area is fully built-out while Area 2b is estimated to account for \$17,400 to \$30,000 of the total revenue of \$1.8 million to \$2.4 million generated by the annexation when the area is fully built-out in the future. Property tax revenue of \$983,700 to \$1.5 million is estimated to comprise 56 to 67 percent of the total revenue from the annexation when the area is fully built-out. The next largest source of revenue estimated to result of the annexation at the built-out condition is franchise fee tax of \$706,800 or 30 to 40 percent of total revenue. Property taxes and franchise fee taxes comprise together about 97 percent of the total revenues at build-out. The PG&E Generating Station is estimated to account for total revenues of \$150,000 to \$365,000 or eight to 16 percent of the total revenue when the annexation area is fully-built-out. The proposed Mirant Marsh Landing Facility is estimated to account for total revenues of approximately \$576,000 to \$784,000 or 33 percent of the total revenue of the annexation area when it is at a fully-built-out condition. Together the PG&E Generating Station and Mirant Marsh Landing facility are estimated to account for 41 to 49 percent of the potential revenues generated for the City's General Fund as the result of the completion of the proposed annexation of the Northeast Antioch area.

Table III-2 presents the total dollars and percentages the components of the estimated sources of revenue comprise of the total revenue forecast for the entire Northeast Antioch annexation area, assuming that the City collects all of the sales tax and franchise fee revenue.



## THE FISCAL IMPACTS OF THE NORTHEAST ANTIOCH ANNEXATION

<b>TABLE III-2</b>				
<b>Summary for Total Annexation Area of Estimated Annual General Fund Revenue to the City of Antioch Assuming the City Receives All of the Sales Tax Revenue and Franchise Fee Revenue</b>				
	Estimated Annual Revenue Following Annexation		Estimated Annual Revenue At Built-Out Condition	
	\$	% of Total <sup>2</sup>	\$	% of Total <sup>2</sup>
Property Tax <sup>1</sup>	163,570-440,075	60-79	984,176-1,565,142	54-66
Property Transfer Tax	3,798	1	22,715	1
Sales and Use Tax	546	0	80,689	3-5
Sales and Use Tax – Public Safety Allocation	52	0	7,714	0
Franchise Fee Tax	83,778	15 -34	701,240	29-39
Penalties	835	0	3,911	0
Business License Tax	18,000	3-7	18,000+	1
Motor Vehicle In-Lieu Fees	1,632	1	1,632	0
Gas Tax	1,388	1	1,388	0
Total Area 1, Area 2a and Area 2b	273,326-554,104	100	1,809,003-2,389,915	100
<sup>1</sup> Range based on minimum property tax to City of Antioch using 3.61% tax rate based on current master tax agreement for property in base year and 7.2% tax rate for additional property in build-out year and maximum property tax to City of Antioch using 9.8% tax rate as if property is in City limit. <sup>2</sup> Figures are rounded.				
Sources: City of Antioch; Gruen Gruen + Associates.				

Table III-2 shows that the key sources of revenues are the property tax at 60 to 79 percent of the estimated total revenues generated initially by the annexation of the entire area and 54 to 66 percent of total revenues at the full build-out of the area. Franchise tax is the other primary source of potential revenue at 15 to 34 percent of forecast total revenue following completion of the annexation and 29 to 39 percent of total revenue forecast at build-out. At full build-out, sales tax is estimated to comprise three to five percent of total revenue. As indicated below, the business license tax revenue is currently only estimated for PG&E.

Table III-3 summarizes the estimated municipal General Fund revenue potentially generated following the proposed annexation and at build-out condition of Area 1, Area 2a, and Area 2b, assuming one-half of the sales tax revenue is allocated to the City and none of the franchise fee revenue is allocated to the City (in this scenario, the revenue is assumed to be allocated to the County).



## THE FISCAL IMPACTS OF THE NORTHEAST ANTIOCH ANNEXATION

TABLE III-3						
Summary by Area of Estimated Annual General Fund Revenue to the City of Antioch Assuming the City Receives One-Half of Sales Tax Revenue and No Franchise Tax Revenue						
	Estimated Annual Revenue Following Annexation \$			Estimated Annual Revenue At Built-Out Condition \$		
	Area 1	Area 2a	Area 2b	Area1	Area 2a	Area 2b
Property Tax <sup>1</sup>	152,055- 412,814	4,211 – 11,431	7,304 – 19,830	870,163- 1,390,236	106,709- 155,076	7,304 - 19,830
Property Transfer Tax	2,043	642	1,113	12,899	8,703	1,113
Sales and Use Tax	273	0	0	21,827	18,518	0
Sales and Use Tax – Public Safety Allocation	52	0	0	4,160	3,554	0
Franchise Tax	0	0	0	0	0	0
Penalties	174	122	539	1,838	1,534	539
Business License Tax	18,000	N/A	N/A	18,000+	N/A	N/A
Motor Vehicle In-Lieu Fees	0	54	1,578	0	54	1,578
Gas Tax	0	46	1,342	0	46	1,342
Total by Area	172,597- 433,356	5,075- 12,295	11,876- 24,402	928,887- 1,448,960	139,118- 187,485	11,876- 24,402
Total Area 1, Area 2a and Area 2b	189,548-470,053			1,079,881-1,660,846		
<sup>1</sup> Range based on minimum property tax to City of Antioch using 3.61% tax rate based on current master tax agreement for property in base year and 7.2% tax rate for additional property in build-out year and maximum property tax to City of Antioch using 9.8% tax rate as if property is in City limit.						
Sources: City of Antioch; Gruen Gruen + Associates.						

Assuming as in the case for the City of Pittsburg of the annexation of the Mirant power plant into that City, that only one-half of the sales tax and none of the franchise fee revenue would be allocated to the City of Antioch, the completion of the annexation Area 1, Area 2a, and Area 2b is estimated to contribute total annual revenues to the Antioch General Fund of almost \$190,000 to approximately \$470,000 and almost \$1.1 million to nearly \$1.7 million when the Northeast Antioch annexation area is fully built-out in the future. Taxes and fees associated with the proposed Mirant Plant and PG&E Generating Station are estimated to generate a total of \$721,000 to \$1.1 million or 67 percent of total revenue resulting from the annexation.

Under the assumption that only one-half of the sales tax and none of the franchise fee revenue is allocated to the City of Antioch, following annexation, Area 1 is estimated to generate approximately \$173,000 to \$433,000 or 91 to 92 percent of the total revenues. Area 2a is estimated to generate only \$5,000 to \$12,000 in total revenue, while Area 2b is estimated to generate nearly \$12,000 to \$24,000 in total revenue for Antioch's General Fund. Property tax revenue of \$163,600 to \$444,000 is estimated to comprise 86 to 95 percent of



the total revenue from the completion of the annexation. The PG&E Generating Station is estimated to generate total annual revenues of approximately \$145,000 to \$361,000 or 77 percent of the estimated total revenues upon completion of the annexation.

At the full built-out condition of the Northeast Antioch annexation area, Area 1 is estimated to account for \$911,000 to \$1.4 million or 86 to 87 percent of the total revenue generated by the build-out of the annexation area. Area 2a is estimated to account for \$139,000 to \$187,000 or 11 percent to 13 percent of the total revenue generated by the build-out of the annexation while Area 2b is estimated to only account for \$12,000 to \$24,000 (less than two percent) of the total revenue estimated to be generated for the General Fund of Antioch due to the full build-out of the Northeast Antioch annexation area. Property tax revenue of approximately \$984,000 to \$1.6 million is estimated to comprise 82 to 95 percent of the total revenue from the build-out of the annexation area. The PG&E Generating Station is estimated to account for total revenues of \$145,000 to \$361,000 or 14 percent to 22 percent of the total revenue when the annexation area is fully-built-out. The proposed Mirant Marsh Landing Facility is estimated to account for revenues of approximately \$576,000 to \$784,000, or 48 percent to 54 percent of the total revenue of the annexation area when it is at a fully-built-out condition. Together the PG&E Generating Station and Mirant Marsh Landing facility are estimated to account for 67 percent to 70 percent of the potential revenues generated for the City's General Fund as the result of the full build-out of the annexation area.

Table III-4 presents the total dollars and percentages the components of the estimated sources of revenue comprise of the total revenue forecast for the entire annexation area, assuming that the City collects one-half of the sales tax and none of the franchise fee revenue.





<b>TABLE III-4</b>				
<b>Summary for Total Annexation Area of Estimated Annual General Fund Revenue to the City of Antioch Assuming the City Receives One-Half of Sales Tax Revenue and No Franchise Tax Revenue</b>				
	Estimated Annual Revenue Following Annexation		Estimated Annual Revenue At Built-Out Condition	
	\$	% of Total <sup>2</sup>	\$	% of Total <sup>2</sup>
Property Tax <sup>1</sup>	163,570-444,075	86-94	984,176-1,565,142	91-94
Property Transfer Tax	3,798	1-2	22,715	1-2
Sales and Use Tax	273	0	40,345	2- 4
Sales and Use Tax – Public Safety Allocation	52	0	7,714	0
Franchise Tax	0	0	0	0
Penalties	835	0	3,911	0
Business License Tax	18,000	4-9	18,000+	1-2
Motor Vehicle In-Lieu Fees	1,632	1	1,632	0
Gas Tax	1,388	1	1,388	0
Total Area 1, Area 2a and Area 2b	189,548-470,053	100	1,079,881-1,660,846	100
<sup>1</sup> Range based on minimum property tax to City of Antioch using 3.61% tax rate based on current master tax agreement for property in base year and 7.2% tax rate for additional property in build-out year and maximum property tax to City of Antioch using 9.8% tax rate as if property is in City limit.				
<sup>2</sup> Figures are rounded.				

If franchise tax is not allocated to the City of Antioch, property tax would comprise most of the potential revenue resulting from the completion of the annexation. Sales and business license taxes would represent other relatively small sources of potential revenue.

The following sections of this chapter present the estimates of revenues potentially generated for the City of Antioch through property taxes and other sources following the completion of the annexation and from the full build-out of Area 1, Area 2a, and Area 2b in the future.

### **PROPERTY TAX FOLLOWING ANNEXATION**

Table III-5 presents an estimate of the property tax estimated to initially result from the City's annexation of Area 1, Area 2a, and Area 2b under two alternative assumptions: (1) the property tax rate that would apply is equivalent to the property tax rate as if the property was already within the City's jurisdiction; and (2) the property tax rate that would apply is equivalent to the property tax rate specified if the Master Property Tax Agreement governed the allocation of property tax revenue.



## THE FISCAL IMPACTS OF THE NORTHEAST ANTIOCH ANNEXATION

TABLE III-5				
Annual Property Tax Revenue Estimated to Result from Completion of Annexation				
	Area 1	Area 2a	Area 2b	Total
2008 Assessed Valuation	\$421,286,455	\$11,664,541	\$20,234,588	\$453,185,584
Total Property Tax <sup>1</sup>	\$4,212,865	\$116,645	\$202,346	\$4,531,856
Property Tax to City of Antioch Using 9.8% Tax Rate as if Property is in City Limit	\$412,814	\$11,431	\$19,830	\$444,076
Property Tax to City of Antioch Using 3.61% Tax Rate Based on Current Master Tax Agreement for Property in Base Year	\$152,055	\$4,211	\$7,304	\$163,570
<sup>1</sup> Based on one percent tax rate of 2008 assessed valuation.				
Sources: Contra Costa County Assessor; Colliers International; 2000 Census; Gruen Gruen + Associates.				

Under the Master Property Tax Agreement, the City is allocated 19.5 percent of the County's base year tax for the annexation area and the County is allocated the balance.<sup>1</sup> The Agreement provides that the City will be allocated 39 percent of the County's share of the increment or increase in the property tax due to the increase in assessed valuation.<sup>2</sup> The County's current share of the basic one percent property tax is 18.5115 percent. Accordingly, the estimate of the property tax revenue to the City of Antioch following the annexation if the Master Property Tax Agreement applies reflects the assumption that the City collects property tax revenue equivalent to 3.61 percent of the one percent total property tax.

Based on information provided by PG&E, the assessed valuation of the PG&E Generating Station is estimated to total \$350 million. The PG&E Generating Station is estimated to comprise 85 percent of the total assessed valuation in Area 1 and 77 percent of the total assessed value of all three areas. The next largest properties comprising 13 percent of estimated current assessed valuation of all three areas are the Mirant Contra Costa plant and the Georgia Pacific plant. Areas 2a and 2b comprise about seven percent of the total \$453.2 million of assessed value for all three areas.

Under the assumption that the Master Property Tax Agreement applies, then the completion of the annexation of Area 1, Area 2a, and 2b is estimated to produce total property tax revenue to the City of approximately \$163,600. Of this total amount, approximately \$157,000 or 93 percent of the total would be attributable to Area 1. Area 2a would generate only \$4,200 in property tax revenue, while Area 2b would generate only approximately \$7,300 in property tax revenue.

<sup>1</sup> MASTER PROPERTY TAX TRANSFER AGREEMENT FOR ALLOCATION OF PROPERTY TAX BETWEEN THE COUNTY OF CONTRA COSTA AND CITY OF ANTIOCH UPON JURISDICTIONAL CHANGES, Page 3, Section 7.a. (a) Base Tax. Id. at Page 3, Section 7.a. (2) Annual tax increment.



Under the assumption that the City collected property tax revenue as if the property was already within the City's boundaries, then the annual property tax revenue following the annexation would be 172 percent higher at nearly \$444,100. Area 1 would contribute approximately \$412,800 in property tax revenue, while Area 2a would contribute \$11,400 and Area 2b almost \$19,900.

### AT BUILD-OUT PROPERTY TAX

Table III-6 presents an estimate of the property tax revenue at build-out of Area 1, Area 2a, and Area 2b for the City of Antioch General Fund under two alternative assumptions: (1) the property tax rate is equivalent to the property tax rate as if the property was already within the City's jurisdiction; and (2) the property tax rate is equivalent to the property tax rate that would apply if the Master Property Tax Agreement governed the allocation of property tax revenue. The base year assessed value is taxed at 3.61 percent and the annual increment of added assessed value is taxed at 7.2 percent of the one percent total property tax.



<b>TABLE III-6</b>				
<b>Comparison of Forecast Property Tax Receipts at Build-out Under Differing Allocations</b>				
	Area 1	Area 2a	Area 2b	Total
Future Assessed Valuation	\$1,418,655,614	\$158,240,881	\$20,234,588	\$1,597,131,083
Total Property Tax <sup>1</sup>	\$14,186,556	\$1,582,409	\$202,346	\$15,971,311
Property Tax to City of Antioch Using 9.8% Tax Rate as if Property is in City Limit	\$1,390,236	\$155,076	\$19,830	\$1,565,142
Property Tax to City of Antioch Using 3.61% Tax Rate Based on Current Master Tax Agreement for Property in Base Year and 7.2% Tax Rate for Additional Property in Build-out Year	\$870,163	\$106,709	\$7,304	\$984,176
<sup>1</sup> Based on one percent tax rate of future assessed valuation.				
Sources: Contra Costa County Assessor; Colliers International; 2000 Census; Gruen Gruen + Associates.				

Under the assumption that the Master Property Tax Agreement applies, then the annexation of Area 1, Area 2a, and 2b at build-out is estimated to produce total property tax revenue to the City of approximately \$984,000. Of this total amount, approximately \$870,100 or 88 percent of the total would be attributable to Area 1. Area 2a is estimated to generate at build-out \$106,700 in property tax revenue, while Area 2b is estimated to generate only \$7,300 in property tax revenue.

Under the assumption that the City collects property tax revenue as if the property was already within the City's boundaries, then the property tax revenue at build-out would be 59 percent higher at nearly \$1.6 million. Area 1 would contribute approximately \$1.4 million in property tax revenue, while Area 2a would contribute \$155,100 and Area 2b only about \$19,900.

Compared to the estimated property tax induced following completion of the annexation, annual property tax revenue at the build-out condition would increase by \$1.1 million under the assumption the annexed property is taxed at the same rate as property within the City's boundaries. Under the Master Property Tax Agreement, at full build-out of the annexation area, the annual property tax revenue is estimated to increase by over \$820,000. For the at build-out scenario, property tax attributable to the PG&E is estimated at \$126,000 and almost \$576,000 is estimated to be attributable to the proposed Mirant Marsh Landing facility.



### PROPERTY TRANSFER TAX REVENUE FOLLOWING ANNEXATION

Table III-7 presents an estimate of the property transfer tax potentially attributable to the sale of housing units and the sale of nonresidential properties in Area 1, Area 2a, and Area 2b following completion of the proposed annexation. Note, for purposes of this analysis, the PG&E Gateway Generation Station and Mirant Contra Costa are assumed to not be sold.

<b>TABLE III-7</b>				
<b>Estimated Annual Property Transfer Tax Revenue Following Completion of Northeast Antioch Annexation</b>				
	Area 1	Area 2a	Area 2b	Total
2008 Assessed Valuation <sup>1</sup>	\$37,151,104	\$11,664,541	\$20,234,588	\$69,050,233
Average Assessed Valuation of Transferred Property <sup>2</sup>	\$3,715,110	\$1,166,454	\$2,023,459	\$6,905,023
Property Transfer Tax to City of Antioch <sup>3</sup>	\$2,043	\$642	\$1,113	\$3,798
<sup>1</sup> Not including PG&E and Mirant facilities.				
<sup>2</sup> Assumes property transfers once every 10 years.				
<sup>3</sup> Transfer tax is \$1.10 per \$1,000 of transfer value and the tax is split 50/50 between City and County.				
Sources: Contra Costa County Assessor; Colliers International; 2000 Census; Gruen Gruen + Associates.				

When the ownership of real property is transferred, the City of Antioch collects property transfer tax. The transfer tax rate for the sale of real property is equal to \$0.55 per \$1,000 of value (The City's General Fund share of the total \$1.10 per \$1,000 levy, of which one-half is received by the County). The estimate of annual property transfer tax revenue of approximately \$3,800 reflects an assumption that in any given year following completion of the proposed annexation 10 percent of the assessed valuation of the property (excluding the PG&E and Mirant facilities) in the three areas is sold.

### AT BUILD-OUT PROPERTY TRANSFER TAX REVENUE

Table III-8 presents an estimate of the property transfer tax at build-out potentially attributable to the sale of housing units and the sale of nonresidential properties in Area 1, Area 2a, and Area 2b. Note, that for purposes of this analysis, the PG&E Generating Station, Mirant Contra Costa, and Mirant Marsh Landing are assumed to not be sold.





## THE FISCAL IMPACTS OF THE NORTHEAST ANTIOCH ANNEXATION

TABLE III-8				
Estimated Annual Property Transfer Tax Revenue at Build-out of Northeast Antioch Annexation Area				
	Area 1	Area 2a	Area 2b	Total
Future Assessed Valuation <sup>1</sup>	\$234,520,263	\$158,240,881	\$20,234,588	\$412,995,732
Average Assessed Valuation of Transferred Property <sup>2</sup>	\$23,452,026	\$15,824,088	\$2,023,459	\$41,299,573
Property Transfer Tax to City of Antioch <sup>3</sup>	\$12,899	\$8,703	\$1,113	\$22,715
<sup>1</sup> Not including PG&E and Mirant facilities.				
<sup>2</sup> Assumes property transfers once every 10 years.				
<sup>3</sup> Transfer tax is \$1.10 per \$1,000 of transfer value and the tax is split 50/50 between City and County.				
Sources: Contra Costa County Assessor; Colliers; 2000 Census; Gruen Gruen + Associates.				

Excluding the PG&E and Mirant facilities, under the assumptions about the characteristics of the annexation area at full build out, the total assessed valuation of the three areas is estimated to total \$413.0 million with Area 1 comprising 57 percent or \$234.5 million of the assessed valuation and Area 2a comprising 38 percent or \$158.2 million of the assessed valuation. Ten percent of the total assessed valuation for all three areas is estimated to be \$41.3 million. Therefore, the annual property transfer tax revenue when the annexation area is fully built-out is forecast to total \$22,700. This is an annual property transfer tax revenue increase of \$18,900 over the estimate of property transfer revenue following annexation of Area 1, Area 2a, and Area 2b of \$3,800.

### SALES TAX REVENUE FOLLOWING ANNEXATION

For purposes of this analysis, we do not factor in the sales tax contributions already made by existing residents and employees of Area 1, Area 2a, and Area 2b. New employees working at the PG&E Generating Station will generate sales tax.<sup>3</sup> PG&E reports approximately 21 full-time workers will be located at the Station. Without the benefit of surveys, it is difficult to accurately forecast the sales tax contributions of these sources of taxable expenditures for such as items such as meals, retail goods and services, gasoline, and a variety of other items. Assuming that on average employees spend the equivalent of \$10 per employee per day produces an annual sales estimate of \$54,600 (21 employees x \$10.00 x 260 work days) and annual sales tax revenue of \$546 (one percent sales tax x \$54,600 sales). The range of total revenue reflects alternative assumptions that all of the sales tax revenue is allocated to the City and that only one-half of the sales tax revenue is allocated to the City with the other one-half allocated to the County in order to consider the implications of the County's

<sup>3</sup> For analytical simplicity, we estimate the sales tax based on the basic one percent sales tax rate the City collects on taxable sales and do not separately estimate "sales tax in-lieu revenue" and take into account the timing differences due to the State of California reducing the distribution of the one percent of sales tax revenue in a given year to the City to 0.75 percent and making up the difference the following fiscal year via sales tax in-lieu revenue.



## THE FISCAL IMPACTS OF THE NORTHEAST ANTIOCH ANNEXATION

agreement with the City of Pittsburg concerning the annexation of the Mirant power plant into the City of Pittsburg. The County's agreement with Pittsburg provides that 50 percent of the sales tax revenue is allocated to the County in the range of total revenue. Therefore, for estimating the lower part of the range of total potential revenue resulting from the annexation, we assume one-half of the sales tax revenue or \$273 is allocated to the County. As indicated below, sales tax is estimated to become more significant in the future at the build-out condition when over 3,000 new workers are estimated to be added in Area 1 and Area 2a.

### SALES TAX REVENUE AT BUILD-OUT

Table III-9 presents an estimate of the sales tax in a future year when Area 1, Area 2a, and Area 2b are assumed to be fully built-out. Sales tax revenue is assumed to be generated only from the addition of new workers in Areas 1 and 2a. Given Area 2b is assumed to remain as the status quo and no new households are assumed to be added in Areas 1 and 2a, no sales tax revenue will be generated from either Area 2b or the addition of new households.

TABLE III-9				
Estimated Annual Sales Tax Revenue at Build-out of Northeast Antioch Annexation Area				
	Area 1	Area 2a	Area 2b	Total
Estimated Number of New Workers	1,679	1,434	0	3,113
Annual Sales <sup>1</sup>	\$4,365,400	\$3,702,400	\$0	\$8,067,800
Sales Tax to City of Antioch if City Retained its Full Share <sup>2</sup>	\$43,654	\$37,035	\$0	\$80,689
Sales Tax to City of Antioch Assuming County Allocated One-Half of Tax Revenue	\$21,827	\$18,518	\$0	\$40,345
<sup>1</sup> Based on expenditure assumption of \$10.00 per day for 260 work days.				
<sup>2</sup> One percent sales tax rate to City of Antioch.				
Sources: Contra Costa County Assessor; Colliers International; 2000 Census; Gruen Gruen + Associates.				

A total of 3,113 new workers are estimated to be added due to the future build-out of Area 1 and Area 2a. Assuming that each new worker expends \$10 per day on retail goods and other items over 260 work days per year results in total annual sales of over \$8.0 million. Applying the one percent sales tax rate results in annual sales tax revenue of \$80,700 assuming the annexation area is fully built-out. In order to illustrate the effects of following the terms of allocation of tax revenues under the May 15, 2007 agreement between the City of Pittsburg and Contra Costa County for the annexation of the Mirant power plant into Pittsburg, for estimating a range of potential total revenue resulting from the annexation, we also assume for one scenario that one-half of the sales tax is shared with the County. Under this assumption, at the build-out of the proposed annexation area, sales tax revenue is estimated to total \$40,345 for the City of Antioch.



### **SALES AND USE TAX – PUBLIC SAFETY ALLOCATION**

The City has a one half cent sales and use tax whose revenue is allocated to the police department. Because not all of the sales and use tax revenue for the public safety allocation is transferred to the General Fund, we estimated this revenue source on a per resident equivalent basis. As in the case of the estimate of the sales tax revenue presented above, we assume the sales and use tax for public safety allocation would only be generated from sales made by additional employees due to the future build-out of the annexed areas. For fiscal year 2008-2009, the City has budgeted \$550,000 in sales and use tax revenue – public safety allocation. This results in a per capita equivalent estimate of \$4.96. We estimate that following the completion of the annexation, only 21 new workers are to be added in Area 1 due to the PG&E Generating Station coming on line in 2009. This results in approximately \$52 of sales and use tax revenue generated for the City of Antioch, assuming that none of the public allocation is shared with the County.

Based on the forecast addition of 1,679 workers (i.e., 840 resident equivalents) in Area 1 and 1,434 workers (i.e., 717 resident equivalents) in Area 2a when Area 1 and Area 2a are fully built-out, sales and use tax revenue to the City of Antioch would approximate \$4,160 and \$3,554, respectively, assuming none of this revenue is shared with the County.

### **FRANCHISE TAXES**

The franchise tax in Antioch applies to revenue from the consumption of gas, electricity, cable T.V., and refuse. Private companies or franchises collect revenue from their users, which in turn, are taxed by the City. The City collects one percent of the gross receipts of gas consumption and 0.5 percent of the gross receipts on electric consumption. The City collects five percent of cable franchise gross receipts. The City collects 12 percent of refuse service gross receipts but only five percent goes to the General Fund. Thus, the annual franchise tax revenue can be calculated on a per household basis, or per resident equivalent, or by type of business.

According to the Mirant representative, because the Mirant Contra Costa Power Plant is a merchant power plant, it will not generate any franchise fee revenue to the City of Antioch because it sells its power directly to PG&E. PG&E has forecast its franchise fees payable to the City of Antioch. The forecast is presented below.

### **PG&E Franchise Revenue**

Under PG&E's gas franchise agreement with the City (Ordinance No. 480-A), franchise fees are paid in based on the greater of two computations: two percent (2.0%) of the gross annual receipts arising from the use, operation and possession of the franchise (known as the Broughton Act formula); or one percent (1.0%) of the gross annual receipts from the sale, transmission or distribution of gas within the City (the formula established in the Franchise Act of 1937, Public Utilities Code section 6201, et seq. ('37 Act)). For calendar year 2007,



PG&E's payment of gas franchise fees to the City was based on the Broughton Act formula.

Within Areas 1, 2a, and 2b of the proposed annexation area are an estimated three to four miles of public gas line subject to franchise fees (a private gas line is not subject to franchise fees). For the period 2007 gas franchise fees of \$427 per public mile of gas line were calculated for the City of Antioch. This results in additional total gas franchise fee revenue of approximately \$1,495.

Within Area 1, 2a and 2b of the proposed annexation area are an estimated three to four miles of public electric line subject to franchise fees (private electric line is not subject to franchise fees). For the period 2007 electric franchise fees of \$730 per public mile of gas line were calculated for the City of Antioch. This results in additional total electric franchise fee revenue of approximately \$2,555.

Thus, total gas and electric franchise fee revenue generated by the addition of PG&E gas and electric lines added to the City results in total additional franchise fee revenue of \$4,050 if this revenue source is allocated to the City. Under the agreement between the City of Pittsburg and Contra Costa County, franchise revenue attributable to PG&E is allocated to the County instead of the City. Accordingly, for modeling the effects of the terms of that contract as if it applied to Antioch, the range of total potential revenue estimates reflect the alternative assumptions that Antioch collects the PG&E franchise revenue or that it is instead allocated to the County.

### **Franchise Revenue Attributable to Businesses and Residents Following Annexation**

Table III-10 presents estimates of gas, electricity, cable TV, and refuse taxes attributable to the residents and businesses in Area 1, Areas 2a, and Area 2b following completion of the proposed annexation.



## THE FISCAL IMPACTS OF THE NORTHEAST ANTIOCH ANNEXATION

<b>TABLE III-10</b>				
<b>Estimated Annual Franchise Fee Revenue Following Completion of Northeast Antioch Annexation</b>				
	Area 1	Area 2a	Area 2b	Total
Added Number of Residents	0	9	264	273
Added Number of Employees	176	105	16	297
<i>Revenue</i>				
Franchise Fees From Residents <sup>1</sup>				
Gas	0	\$17	\$499	\$516
Electric	0	\$29	\$843	\$872
Cable TV	0	\$75	\$2,186	\$2,261
Refuse	0	\$69	\$2,010	\$2,079
TOTAL	0	\$190	\$5,538	\$5,728
Franchise Fees From Employees/Businesses <sup>2</sup>				
Gas	\$47,000	\$12,000	\$0	\$59,000
Electric	\$12,000	\$3,000	\$0	\$15,000
Cable TV	\$0	\$0	\$0	\$0
Refuse	\$0	\$0	\$0	\$0
TOTAL	\$59,000	\$15,000	\$0	\$74,000
Franchise Fees From PG&E				
Gas	\$1,495	\$0	\$0	\$1,495
Electric	\$2,555	\$0	\$0	\$2,555
TOTAL	\$4,050	\$0	\$0	\$4,050
<sup>1</sup> Based on resident equivalent estimate of \$1.89 for gas; \$3.19 for electric; \$8.28 for cable TV; and \$7.61 for refuse. <sup>2</sup> Based on annual consumption estimate of 30 therms per square foot for large industrial users and 15 therms per square foot for smaller industrial users; and 68 kilowatt hours per square foot for large industrial users and 34 kilowatt hours per square foot for smaller industrial users. Total gas charge estimate of \$0.789605 per therm. Total electric charge estimate of \$0.17388 per kilowatt hour. City of Antioch gas franchise fee on gross receipts of one percent and electric franchise fee on gross receipts of 0.5 percent.				
Sources: Contra Costa County Assessor; Colliers International; 2000 Census; PG&E; Gruen Gruen + Associates.				

The best approximation of the added revenue from franchise fees on gas, electric, cable TV, and refuse consumption is based on resident equivalents to take into account that some franchise fee revenue is due not only to residents but to employees working in Antioch. For fiscal year 2008-2009, the City has budgeted \$210,000 in gas franchise fee revenue. This results in a per resident equivalent estimate of \$1.89 (\$210,000 divided by 110,996 resident equivalents). Electric franchise fee revenue is budgeted at \$354,355 for 2008-2009 which results in a resident equivalent estimate of \$3.19. Cable TV franchise fee revenue is budgeted at \$919,107 for 2008-2009 resulting in a resident equivalent estimate of \$8.28. Refuse franchise fee revenue is budgeted at \$845,000 resulting in a resident equivalent





estimate of \$7.61.

The number of added residents following the completion of the proposed annexation is estimated at nine in Area 2a and 264 in Area 2b. Using the resident equivalent estimates for franchise fee revenues results in estimates of additional base case total franchise fee revenue for gas of \$516; electric of \$872; cable TV of \$2,261; and refuse of \$2,079 to the City of Antioch.

For Area 1, we estimated franchise fees from gas and electric usage generated by the existing businesses. We estimated gross receipts from gas and electric usage based on an average total rate of \$0.17388 per kilowatt hour and \$0.789605 per therm based on rate information from PG&E. We multiplied these rates based on utility consumption estimates provided by businesses in Area 1. This results in an estimate of total gas and electric revenues of \$47,000 and \$12,000, respectively, in Area 1.

For Area 2a, we estimate gas and electric consumption based information on provided by an existing business in Area 1. We discount the consumption amounts by one-half given that Area 1 contains heavy industrial users and Area 2a is likely to attract light industrial users which may likely to consume relatively fewer amounts of gas and electricity. Therefore, based on a gas consumption estimate of 15 therms per square foot of space and electric consumption estimate of 34 kilowatt hours per square foot of space, Area 2a with approximately 100,200 square feet of space s estimated to generate 1.5 million therms of gas and 3.4 million kilowatt hours of electricity usage. Multiplying these estimates by the PG&E rates described above results in estimated gross gas receipts of \$1.1 million and gross electric receipts of \$591,200. Using the one percent franchise fee rate for gas and the 0.5 percent franchise fee rate for electric results in estimated total franchise fee revenues to the City of Antioch of \$12,000 for gas and \$3,000 for electric from Area 2a.

For the estimate of the range of total potential revenue resulting from the annexation, we assume in one case that the City collects the gas and electric franchise revenue and in the other case, the revenue is allocated to the County.

### **Franchise Revenue Attributable to Annexation Area Businesses and Residents at Build-out**

Table III-11 presents for the forecast at build-out condition of the Northeast Antioch annexation area estimates of gas, electricity, cable TV, and refuse taxes attributable to the residents and businesses in Area 1, Areas 2a, and Area 2b.



## THE FISCAL IMPACTS OF THE NORTHEAST ANTIOCH ANNEXATION

**TABLE III-11**

**Estimated Annual Franchise Fee Revenue  
at Build-out of Northeast Antioch Annexation Area**

	Area 1	Area 2a	Area 2b	Total
Added Number of Residents	0	9	264	273
Added Number of Employees	1,679	1,434	0	3,113
<i>Revenue</i>				
Franchise Fees From Residents <sup>1</sup>				
Gas	\$0	\$17	\$499	\$516
Electric	\$0	\$29	\$843	\$872
Cable TV	\$0	\$75	\$2,186	\$2,261
Refuse	\$0	\$69	\$2,010	\$2,079
TOTAL	\$0	\$190	\$5,538	\$5,728
Franchise Fees From Employees/Businesses <sup>2</sup>				
Gas	\$465,800	\$92,500	\$0	\$558,300
Electric	\$115,700	\$23,000	\$0	\$138,700
TOTAL	\$581,500	\$115,500	\$0	\$697,000
Franchise Fees From PG&E				
Gas	\$1,495	\$0	\$0	\$1,495
Electric	\$2,555	\$0	\$0	\$2,555
TOTAL	\$4,050	\$0	\$0	\$4,050

<sup>1</sup> Based on resident equivalent estimate of \$1.89 for gas; \$3.19 for electric; \$8.28 for cable TV; and \$7.61 for refuse.

<sup>2</sup> Based on annual consumption estimate of 30 therms per square foot for large industrial users and 15 therms per square foot for smaller industrial users; and 68 kilowatt hours per square foot for large industrial users and 34 kilowatt hours per square foot for smaller industrial users. Total gas charge estimate of \$0.789605 per therm. Total electric charge estimate of \$0.17388 per kilowatt hour. City of Antioch gas franchise fee on gross receipts of one percent and electric franchise fee on gross receipts of 0.5 percent.

Sources: Contra Costa County Assessor; Colliers International; 2000 Census;  
Gruen Gruen + Associates.

Franchise fee revenue estimated to be generated by residents in the Northeast Antioch annexation area at build-out is the same forecast following completion of the annexation because the number of residents is not anticipated to change under the build-out condition. Franchise fee revenue from PG&E is based on the public miles of pipes and lines in Antioch. Therefore, the franchise fee revenue will also remain the same under the at build-out condition. Franchise fee revenue from businesses/employees is forecast to increase when the annexation area is fully built-out. To estimate franchise fee revenue from



businesses occupying additional space developed in the annexation area, we estimated how much gas and electricity is likely to be consumed by larger and smaller industrial businesses which are the kinds of users anticipated to occupy building space in Areas 1 and 2a. Using the consumption levels of a large industrial user currently operating in the annexation area as a prototype, we estimated gas and electric usage on a per square foot basis. For larger industrial users we estimate gas usage of approximately 30 therms per square foot of space and electric usage of 68 kilowatt hours per square foot of space. For smaller industrial users we assume one-half the consumption volume per square foot for gas and electricity. Applying these usage standards to the 2.2 million square feet of industrial space in Area 1 and 772,600 square feet of industrial space in Area 2a results in an estimate of potential consumption of nearly 70 million therms and over 158 million kilowatt hours. Multiplying the estimated consumption of 70 million therms and the 158 million kilowatt hours by the gas rate of \$0.789605 per therm and electric rate of \$0.17388 per kilowatt hour results in estimated gross gas receipts of \$55.3 million and gross electric receipts of \$27.5 million from businesses. Based on the one percent gas franchise rate and 0.5 percent electric franchise rate, franchise fee revenue for gas usage at build-out of the annexation area is forecast to total \$558,300 and electric usage is forecast to total \$138,700. Again, for the estimate of the range of total potential revenue resulting from the build-out of the annexation area, we assume in one case that the City collects the gas and electric franchise revenue and in the other case, the revenue is allocated to the County.

### LICENSES

The City of Antioch charges an annual business license fee to businesses operating in the City of Antioch. The fee is based on the gross receipts of sales or service made in the City of Antioch plus a one-time \$30.00 application fee for new businesses. The fee is a flat fee for gross receipts up to \$20,000; \$1.25 per \$1,000 of receipts between \$20,001 and \$1,000,000; and \$1,250 plus 20 cents for each additional \$1,000 over receipts of \$1,000,000. To be conservative, we have only included the business license fee revenue that will be generated by the operation of the PG&E Gateway Generating Station. PG&E estimates it would generate \$18,000 in annual business license fee calculated on 2007 gross receipts from customers within the City.

### PENALTIES

#### **Penalties Revenue Attributable to Annexation Area Businesses and Residents**

Table III-12 presents an estimate of penalties revenue following the annexation of Area 1, Area 2a, and Area 2b.



## THE FISCAL IMPACTS OF THE NORTHEAST ANTIOCH ANNEXATION

**TABLE III-12**

**Estimated Annual Penalty Fee Revenue Following Completion of Northeast Antioch Annexation**

	Area 1	Area 2a	Area 2b	Total
Added Number of Residents	0	9	264	273
Added Number of Employees	176	105	16	297
Estimated Additional Equivalent Residents <sup>1</sup>	88	62	272	422
Estimated Total Penalties Revenue <sup>2</sup>	\$174	\$122	\$539	\$835

<sup>1</sup> Assumes municipal revenues and costs generated by every two employees equal that of one resident.

<sup>2</sup> Based on resident equivalent estimate of \$1.98.

Sources: Contra Costa County Assessor; City of Antioch; 2000 Census; Gruen Gruen + Associates.

The best approximation of the added revenue from penalties is based on resident equivalents to take into account that penalty revenue is due not only to residents but to employees working in Antioch. For fiscal year 2008-2009, the City has budgeted \$220,000 in penalties revenue. This results in a per resident equivalent estimate of \$1.98 (\$220,000 divided by 110,996 resident equivalents). Total penalties revenue from all three areas approximates \$835 in the base case annexation year assuming 422 resident equivalents in the annexed areas.

### **Penalties Revenue Attributable to Annexation Area Businesses and Residents at Build-out**

Table III-13 presents an estimate of penalties revenue upon build-out of Area 1, Area 2a, and Area 2b.

**TABLE III-13**

**Estimated Annual Penalty Fee Revenue at Build-out of Northeast Antioch Area**

	Area 1	Area 2a	Area 2b	Total
Added Number of Residents	0	9	264	273
Added Number of Employees	1,679	1,434	16	3,129
Estimated Additional Equivalent Residents <sup>1</sup>	927	774	272	1,973
Estimated Total Penalties Revenue <sup>2</sup>	\$1,838	\$1,534	\$539	\$3,911

<sup>1</sup> Assumes municipal revenues and costs generated by every two employees equal that of one resident.

<sup>2</sup> Based on resident equivalent estimate of \$1.98.

Sources: Contra Costa County Assessor; City of Antioch; 2000 Census; Gruen Gruen + Associates.

Based on a per resident equivalent estimate of \$1.98 for penalty fee revenue, total penalty fee revenue from all three areas approximates \$3,900 at build-out assuming the addition of 1,973 resident equivalents in the Northeast Antioch Annexation Area.



## REVENUES FROM OTHER AGENCIES

### Motor Vehicle In-Lieu Fees

The City of Antioch receives funds from the State of California for vehicle license fees called “motor vehicle in lieu fees”. The funds from this tax are transferred into the General Fund and used to cover the cost of street maintenance. The amount of motor vehicle in lieu fees transferred from the State decreased beginning in fiscal year 2004-2005. The motor vehicle in lieu fees are allocated to the City through complex formulas that consider population, street miles, and the number of registered vehicles. The best approximation of the added revenue from motor vehicle in lieu fee is based on population. Table III-14 presents the results of the estimated motor vehicle-in lieu fees to the City of Antioch.

For fiscal year 2008-2009, the City has budgeted \$600,000 in motor vehicle in lieu fees. This results in a per capita estimate of \$5.98. Therefore, based on the addition of nine residents in Area 2a and 264 residents in Area 2b, motor vehicle in lieu fee revenue would approximate \$54 and \$1,578, respectively. The total motor vehicle in-lieu fees of \$1,632 are estimated to remain the same upon build-out of the annexed areas because no new households are forecast to be added into the three areas.

TABLE III-14				
Northeast Antioch Annexation Area Estimated Annual Franchise Fee Revenue in Base Year and Build-out Year of Annexation				
	Area 1	Area 2a	Area 2b	Total
Added Number of Residents	0	9	264	271
Total Motor Vehicle In-Lieu Fee Revenue <sup>1</sup>	\$0	\$1,578	\$54	\$1,632
<sup>1</sup> Based on per capita estimate of \$5.98.				
Sources: Contra Costa County Assessor; City of Antioch; 2000 Census; Gruen Gruen + Associates.				

### Gas Tax

Gas taxes is the only non-General Fund revenue source include in this analysis. Gas taxes are included because funds are transferred into the general fund and used to cover the costs of street maintenance. Gas taxes are redistributed from the State to local government units based on a combination of factors including population. This analysis estimates gas tax revenues on a per capita basis. For fiscal year 2008-2009, the City has budgeted gas tax fund revenue of \$510,000. Based on a City population of 100,361, the budgeted gas tax fund revenue results in per capita gas tax revenue of \$5.08. Based on an anticipated initial annexation and build-out resident population of 271 in Areas 2a and 2b, gas tax resulting from the proposed annexation is estimated to total \$1,388.





## CHAPTER IV

### ESTIMATED OPERATING COSTS OF PROVIDING CITY SERVICES INDUCED BY THE ANNEXATION OF THE NORTHEAST ANTIOCH AREA

#### INTRODUCTION AND SUMMARY OF OPERATING COSTS INDUCED BY ANNEXATION

This chapter presents estimates of the annual operating costs potentially induced by the annexation of Area 1, Area 2a, and Area 2b. (Chapter VI presents estimates of the capital costs associated with the proposed annexation; that is, the costs associated with building new or upgrading to City standards the required infrastructure such as streets, drainage, sewage, and related facilities). The Chapter does not cover costs for services offset by user chargers.

As described in Chapter I, the City will provide the same standard of services to the area proposed to be annexed into the City. Based on our interviews with and information obtained from municipal staff, and analysis of the Budget, the General Fund costs that the City of Antioch will incur in providing municipal services to the residents, businesses and visitors to Area 1, Areas 2a, and Area 2b include the following categories:

- Legislative and Administrative and Finance;
- Police;
- Public Works;
- Community Development, and
- Non-departmental.

Based on discussions with and input from the Finance Director, City Manager, and other department directors, we use the Budget for 2008-2009 as a benchmark for estimating General Fund costs likely to be induced by the proposed project. To estimate the potential costs of providing services to the proposed annexation area, we draw heavily on the use of extrapolating estimates of average per capita or resident equivalent metrics. We rely on these techniques in the absence of available data on costs of providing services to industrial areas or nonresidential uses versus residential areas and residential uses and based on the interviews which suggest that residential use and households generate greater demands for municipal services than nonresidential uses.

Table IV-1 summarizes the total annual operating costs estimated to be induced by the completion of the proposed annexation and at the build-out of Area 1, Area 2a, and Area 2b.



**TABLE IV-1**

**Summary of Estimated Annual Service Costs Induced Following the Annexation  
of Area 1, Area 2a, and Area 2b and at Build-out<sup>1</sup>**

Service	Estimated Initial Base Case Annual Cost \$			Estimated at Build-out Annual Cost \$		
	Area 1	Area 2a	Area 2b	Area 1	Area 2a	Area 2b
Legislative and Administrative	5,385	3,778	16,664	56,827	47,410	16,664
Police	19,752	13,859	61,121	208,432	173,893	61,121
Public Works	8,649	6,664	22,342	45,338	37,800	22,342
Community Development	1,254	880	3,881	13,235	11,041	3,881
Non-Departmental	246	173	761	2,594	2,164	761
Total	35,286	25,354	104,769	326,426	272,308	104,769
Total Area 1, Area 2a, Area 2b	165,409			703,503		
<sup>1</sup> Figures have been rounded.						
Sources: City of Antioch; Gruen Gruen + Associates.						

In total, the annexation of Area 1, Area 2a, and Area 3b is estimated to initially induce annual operating costs of approximately \$165,400. Under the characteristics assumed to apply at the full build-out of Area 1, Area 2a, and Area 3b, the annexation is estimated to induce annual operating costs of a total of \$703,500.

The following sections present estimates of the operating costs associated with the existing conditions assumed to apply following completion of the proposed annexation and at the future built-out condition of Area 1, Area 2a, and Area 2b.

### **LEGISLATIVE AND ADMINISTRATIVE AND FINANCE**

Legislative and administrative services include the functions of the City Council, boards and commissions and the administration operations of the City, including City Manager, City Attorney, City Clerk, and Personnel/Labor Relations departments. The cost of providing legislative and administrative services to the annexation area is a function of the increased burden placed on the City's administrative and support services. Typically, legislative and administrative government services contain a significant fixed cost that does not change much as the result of new development. Based on our interview with the City Manager, and review of the Budget, we assume 10 percent of legislative and administrative costs are fixed and will not vary with changes in population and employment in Area 1, Area 2a, and Area 2b.



## THE FISCAL IMPACTS OF THE NORTHEAST ANTIOCH ANNEXATION

**TABLE IV-2**

**Estimated Annual Operating Cost of Providing Legislative and Administrative and Finance Services Initially to the Northeast Antioch Annexation Area and At Its Full Build-out<sup>1</sup>**

2008-2009 Legislative and Administrative Budget	\$7,557,140					
2008-2009 Legislative and Administrative Costs Adjusted by 10% to Reflect Fixed Costs	\$6,801,426					
2008 Antioch Population	100,361					
2008 Antioch Employment	21,270					
2008 Resident Equivalent Population	110,996					
2008-2009 Cost per Equivalent Resident	\$61.28					
	Following Annexation			At Build-out Annexation		
	Area 1	Area 2a	Area 2b	Area 1	Area 2a	Area 2b
Estimated Equivalent Residents	88	62	272	927	774	272
Total Annual Legislative and Administrative Services and Finance Cost by Area	\$5,385	\$3,778	\$16,664	\$56,827	\$47,410	\$16,664
Total Legislative and Administrative and Finance Services Cost for Area 1, Area 2a, Area 2b	\$25,827			\$120,901		
<sup>1</sup> Figures are rounded.						
<sup>2</sup> The demand for municipal services reflects the assumption that the demand for municipal services from two residents is equivalent to one job in Antioch.						
Sources: City of Antioch; California Department of Finance; Gruen Gruen + Associates.						

As shown on Table IV-2, to estimate the cost of providing legislative and administrative services to the households and businesses of the areas potentially annexed, we use the fiscal year 2008-2009 legislative and administrative budget of \$7,557,140 as a baseline. We further assume that 10 percent of the legislative and administrative and finance department's budget is fixed and does not vary with changes in population. Accordingly, we adjusted the 2008-2009 Budget of \$5,005,985 by 10 percent to account for a fixed cost component of legislative and administrative services. This results in estimated legislative and administrative services costs affected by additional households and businesses of \$6,801,426. Dividing this estimated total cost by the estimated 100,361 population of Antioch and Antioch employment of 21,270 results in a per capita resident equivalent legislative and administrative and finance services cost estimate of \$61.28. This per capita equivalent or service unit measure reflects the assumption that the demand for municipal services from two residents is equivalent to the demand generated by one worker. Multiplying the estimate per equivalent resident cost of \$61.28 by the estimated number of equivalent residents or service units produces an estimate of total legislative and administrative and finance services costs following the completion of the proposed annexation of \$25,800. Area 2b is estimated to induce approximately \$16,700 of the total legislative and administrative and finance costs following completion of the proposed annexation or 65 percent of total costs. Area 1 is estimated to induce approximately \$5,400 (21 percent) and Area 2a is estimated to induce approximately \$3,800 (15 percent) of total legislative and administrative and finance costs



following completion of the proposed annexation.

Under the characteristics assumed to apply to the full built-out condition of the proposed annexation area, legislative and administrative and finance costs are estimated to increase by 368 percent to approximately \$120,900. Area 1 is estimated to account for approximately \$56,800 or 47 percent of the total costs. Area 2a is estimated to induce approximately \$47,400 or 39 percent, while Area 2b is estimated to induce the same amount as at annexation of approximately \$16,700 or 14 percent of total legislative and administrative and finance costs at full build-out. This reflects the assumption of no change in the population and employment make-up of Area 2b.

### **POLICE**

The estimated annual operating cost of providing police services to Area 1, Area 2a, and Area 2b is based on providing the same level of service provided within the City limits to the Northeast Antioch annexation area. The data used to make this estimate were obtained by a review of the Budget and information provided by an interview with a representative of the police department about the demands induced by the annexation of Area 1, Area 2a, and Area 2b. As shown on Table IV-3, to estimate the cost of providing police services to the households and businesses of the proposed annexation area, we use the fiscal year 2008-2009 police budget of \$27,718,600 as a baseline.



## THE FISCAL IMPACTS OF THE NORTHEAST ANTIOCH ANNEXATION

**TABLE IV-3**

**Estimated Annual Operating Cost of Providing Police Services  
Initially to the Northeast Antioch Annexation Area and At Its Full Build-out<sup>1</sup>**

2008-2009 Police Department Budget	\$27,718,600					
2008-2009 Police Costs Adjusted by 10% to Reflect Fixed Costs	\$24,946,740					
2008 Antioch Population	100,361					
2008 Antioch Employment	21,270					
2008 Resident Equivalent Population <sup>2</sup>	110,996					
2008-2009 Cost per Equivalent Resident	\$224.75					
	Initial Base Case Annexation			At Build-out Annexation		
	Area 1	Area 2a	Area 2b	Area 1	Area 2a	Area 2b
Estimated Equivalent Residents	88	62	272	927	774	272
Total Annual Police Services Cost by Area	\$19,752	\$13,859	\$61,121	\$208,432	\$173,893	\$61,121
Total Police Services Cost for Area 1, Area 2a, Area 2b	\$94,733			\$443,447		
<sup>1</sup> Figures are rounded.						
<sup>2</sup> The demand for municipal services reflects the assumption that the demand for municipal services from two residents is equivalent to one job in Antioch.						
Sources: City of Antioch; California Department of Finance; Gruen Gruen + Associates.						

We further assume that 10 percent of the Police Department's budget is fixed and does not vary with changes in population. Accordingly, we adjusted the 2008-2009 Budget of \$25,005,985 by 10 percent to account for a fixed cost component of police services. This results in estimated police service costs affected by additional households and businesses of \$24,946,740. Dividing this estimated total cost by the estimated 100,361 population of Antioch and Antioch employment of 21,270 results in a per capita resident equivalent police services cost estimate of \$224.75. Multiplying the estimate per equivalent resident cost of \$224.75 by the estimated number of equivalent residents or service units produces an estimate of total police services costs following the annexation of \$94,700. Area 2b is estimated to account for \$61,100 or 65 percent of the initial police services costs. Area 1 is estimate to induce police services costs of nearly \$19,800 or 21 percent of the total costs resulting from the completion of the annexation, while Area 2a is estimated to induce police services costs of nearly \$13,900 or 15 percent of total police services costs.

At full build-out of the annexation area, the police services costs attributable to the annexation is estimated to induce \$443,400 in additional police services costs. Area 1 is estimated to induce \$208,400 in police services costs or 47 percent of the total costs. Area 2a is estimated to induce \$173,900 or 39 percent of total police services costs at build-out. The police services costs in Area 2b are assumed to remain the same due to the assumption of no change in the population and employment levels in Area 2b.





## THE FISCAL IMPACTS OF THE NORTHEAST ANTIOCH ANNEXATION

### PUBLIC WORKS

The Public Works Department provides a variety of services, including street maintenance signal lighting, stripping and signing, facilities maintenance, and park maintenance. Table IV-4 shows the estimated annual operating costs of providing public works services attributable to Area 1, Area 2a, and Area 2b.

TABLE IV-4						
Estimated Annual Operating Cost of Providing Public Works Services Initially to the Northeast Antioch Annexation Area and At Its Full Build-out <sup>1</sup>						
2008-2009 Public Works Department Budget <sup>2</sup>	4,854,187					
2008 Antioch Population	100,361					
2008 Antioch Employment	21,270					
2008 Resident Equivalent Population <sup>3</sup>	110,996					
2008-2009 Cost per Equivalent Resident	\$43.73					
	Initial Base Case Annexation			At Build-out Annexation		
	Area 1	Area 2a	Area 2b	Area 1	Area 2a	Area 2b
Estimated Equivalent Residents	88	62	272	927	774	272
Annual Public Works Services Cost by Area	\$3,849	\$2,711	\$11,895	\$40,538	\$33,847	\$11,895
2008-2009 Street-Related Budget	\$1,745,401					
Number of Antioch Street Miles	309.1					
2008-2009 Cost per Street Mile	\$5,647					
Estimated Additional Street Miles	0.85	0.70	1.85	0.85	0.70	1.85
Annual Street-Related Cost by Area	\$4,800	\$3,953	\$10,447	\$4,800	\$3,953	\$10,447
Annual Public Works Services Cost by Area	\$8,649	\$6,664	\$22,342	\$45,338	\$37,800	\$22,342
Total Public Works Services Cost for Area 1, Area 2a, Area 2b	\$37,655			\$105,480		
<sup>1</sup> Figures are rounded.						
<sup>2</sup> Excludes street maintenance expenditures of \$1,745,401 budgeted in 2008-2009.						
<sup>3</sup> The demand for municipal services reflects the assumption that the demand for municipal services from two residents is equivalent to one job in Antioch.						
Sources: City of Antioch; California Department of Finance; Gruen Gruen + Associates.						

The 2008-2009 General Fund Budget for providing public works is approximately \$6,599,588, after including costs funded from other sources. The impact of the proposed annexation on street-related expenditures is best estimated in terms of the average cost per street mile. The City contains a total of 309.1 street miles. Street-related expenditures are budgeted at \$1,745,401. This results in an average per street mile expenditure estimate of \$5,647. Area 1 will add 0.85 street miles upon annexation. This will induce additional street related maintenance expenditures of \$4,800. Area 2a will add 0.70 street miles upon



annexation. This will induce additional street related expenditures of \$3,953. Area 2b will add 1.85 street miles upon annexation. This will induce additional street related maintenance expenditures of \$10,447. Additional street-related maintenance expenditures following annexation will total \$19,200.

Public works expenditures of \$4,854,187 for other non-street related expenditures including administration, signal lighting, striping and signing, facilities maintenance, and subsidies to other programs are calculated on a per resident equivalent basis. Because the interviews suggest significant deficiencies in the current infrastructure serving the potential annexation area and that operating costs will be higher because of the deficient conditions and that public works budget is already strained, we assume no fixed costs apply to the provision of public works services. Dividing this estimated total budget of \$4,854,187 by the estimated 100,361 population of Antioch and Antioch employment of 21,270 results in a per capita resident equivalent public works services cost estimate of \$43.73. Multiplying the estimate per equivalent resident cost of \$43.73 by the estimated number of equivalent residents or service units produces an estimate of non-street related public works services costs following the completion of the proposed annexation of \$18,500. Adding street related expenditures of \$19,200 results in estimated total public works service costs of \$37,700. Area 2b is estimated to account for \$22,300 or 59 percent of the total base case public works services costs. Area 1 is estimated to induce public works services costs following annexation of over \$8,600 or 23 percent of the total costs of the annexation, while Area 2a is estimated to induce public works services costs of nearly \$6,700 or 18 percent of total public works services costs.

At full build-out of the Northeast Antioch Annexation Area, the annual public works services costs are estimated to \$105,500. Area 1 is estimated to induce \$45,300 in public works services costs or 43 percent of the total costs. Area 2a is estimated to induce \$37,800 or 36 percent of total public works costs at build-out. Area 2b is estimated to induce \$22,300 or 21 percent of total public works costs at build-out.

### COMMUNITY DEVELOPMENT

Table IV-5 shows the estimated annual Community Development Department costs estimated to apply following completion of the proposed annexation and at the full build-out of Area 1, Area 2a, and Area 2b. Community development functions include planning and zoning, engineering, land development and housing activities, and building inspection services.



## THE FISCAL IMPACTS OF THE NORTHEAST ANTIOCH ANNEXATION

**TABLE IV-5**

**Estimated Annual Operating Cost of Providing Community Development Services  
Initially to the Northeast Antioch Annexation Area and At Its Full Build-out<sup>1</sup>**

2008-2009 Community Development Budget	\$1,760,013					
2008-2009 Community Development Costs Adjusted by 10% Fixed Costs	\$1,584,012					
2008 Antioch Population	100,361					
2008 Antioch Employment	21,270					
2008 Resident Equivalent Population	110,996					
2008-2009 Cost per Equivalent Resident	\$14.27					
	Initial Base Case Annexation			At Build-out Annexation		
	Area 1	Area 2a	Area 2b	Area 1	Area 2a	Area 2b
Estimated Equivalent Residents	88	62	272	927	774	272
Total Annual Community Development Services Cost by Area	\$1,254	\$880	\$3,881	\$13,235	\$11,041	\$3,881
Total Community Development Services Cost for Area 1, Area 2a, Area 2b	\$6,015			\$28,157		
<sup>1</sup> Figures are rounded.						
<sup>2</sup> The demand for municipal services reflects the assumption that the demand for municipal services from two residents is equivalent to one job in Antioch.						
Sources: City of Antioch; California Department of Finance; Gruen Gruen + Associates.						

To estimate the Community Development Department costs likely to be attributable to serving the Northeast Antioch Annexation Area following completion of the annexation and at the future condition of full build-out Area 1, area 2a, and Area 2b, we estimated the net costs of community development services by offsetting revenues from user charges or service fees for the provision of community development services. We adjusted the resulting estimate of net costs of approximately \$1,760,013 by 10 percent to account for fixed costs. This results in estimated community development department service costs affected by additional households and businesses of \$1,584,012. Dividing this estimated total cost by the estimated 100,361 population of Antioch and Antioch employment of 21,270 results in a per capita resident equivalent or service unit Community Development Department cost estimate of \$14.27. Multiplying the estimate per equivalent resident cost of \$14.27 by the estimated number of equivalent residents or service units produces an estimate of total community development services costs following completion of the proposed annexation of about \$6,000. Area 2b is estimated to account for \$3,900 or 65 percent of the total community development services costs resulting from the completion of the annexation.

At full build-out of the Northeast Antioch Annexation Area, the community development services costs are estimated to total \$28,200. Area 1 is estimated to induce \$13,200 in community development services costs or 47 percent of the total costs. Area 2a is estimated to induce \$11,000 or 39 percent of total community development services costs at build-out.



## THE FISCAL IMPACTS OF THE NORTHEAST ANTIOCH ANNEXATION

The community development services costs in Area 2b are assumed to remain the same due to the assumption of no change in the population and employment levels in Area 2b.

### NON-DEPARTMENTAL COSTS

Other services potentially impacted by the annexation of Area 1, Area 2a, and Area 2b include non-departmental costs. Non-departmental costs (not included in administrative and legislative and finance service costs) include budget items allocated over more than one department, and consist primarily of finance and information services and liability claim expenses, and property tax administration fees.

Table IV-6 presents estimates of the total induced operating costs for non-departmental services.

TABLE IV-6						
Estimated Annual Operating Cost of Providing Non-Departmental Services Initially to the Northeast Antioch Annexation Area and At Its Full Build-out¹						
2008-2009 Non-Departmental Budget	\$1,552,555					
2008-2009 Non-Departmental Costs Adjusted by 80% to Reflect Fixed Costs	\$310,511					
2008 Antioch Population	100,361					
2008 Antioch Employment	21,270					
2008 Resident Equivalent Population	110,996					
2008-2009 Cost per Equivalent Resident	2.80					
	Initial Base Case Annexation			At Build-out Annexation		
	Area 1	Area 2a	Area 2b	Area 1	Area 2a	Area 2b
Estimated Equivalent Residents	88	62	272	927	774	272
Total Annual Non-Departmental Services Cost by Area	\$246	\$174	\$762	\$2,594	\$2,164	\$761
Total Non-Departmental Services Cost for Area 1, Area 2a, Area 2b	\$1,182			\$5,520		
¹Figures are rounded.						
Sources: City of Antioch; California Department of Finance; Gruen Gruen + Associates.						

The interviews suggest a high fixed cost component would apply to non-departmental costs. We assume an 80 percent adjustment to account for fixed costs. Based on a 2008-2009 budget allocated of \$1,552,555, and adjusted for a fixed cost component of 80 percent, non-departmental costs average \$2.80 per Antioch equivalent resident. Multiplying the per resident equivalent estimate of \$2.80 by the anticipated number of equivalent residents by Area 1, Area 2a, and Area 2b results in an estimate of the non-departmental costs induced by the completion of the proposed annexation of about \$1,200 and \$5,500 at build-out.



### LEISURE AND COMMUNITY SERVICES

Based on our interviews and given the limited number of residents, we do not believe that leisure and community service costs will be affected significantly by the potential annexation of Area 1, Area 21, and Area 2b. The interviews suggest that any services provided will be paid for based on user fees and that the costs of administering the leisure and community services department are essentially fixed.





**CHAPTER V****NET ANNUAL FISCAL IMPACTS****INTRODUCTION**

This chapter presents a comparison of the estimated General Fund revenues and General Fund service operating costs associated with the completion of the Northeast Antioch annexation area and at build-out of Area 1, Area 2a, and Area 2b. The range of General Fund revenues reflect the use of alternative allocations of property taxes, sales tax, and franchise fee revenue. The effect of the addition of the proposed Mirant Plant is included in the forecasts for the at build-out condition, while the effect of the PG&E Generation station is included in the forecasts for the first year after completion of the proposed annexation.

**RELATIONSHIP BETWEEN ANNUAL REVENUES AND ANNUAL OPERATING COSTS FOLLOWING COMPLETION OF THE ANNEXATION OF THE NORTHEAST ANTIOCH AREA ASSUMING ANTIOCH RECEIVES ALL OF THE SALES AND FRANCHISE FEE TAX REVENUE**

Table V-1 presents a comparison of forecast annual General Fund revenues and annual service costs likely to be induced by the completion of the annexation of the Northeast Antioch annexation area.

<b>TABLE V-1</b>				
<b>Relationship Between Annual Revenues and Annual Operating Costs Following Completion of The Annexation of the Northeast Antioch Area<sup>1</sup></b>				
	Following Annexation			
	\$			
	Area 1	Area 2a	Area 2b	Total
Annual Revenues	235,920-496,679	20,265-27,485	17,414-29,940	273,326-554,104
Annual Operating Costs	35,286	25,354	104,769	165,409
Estimated Balance	200,634-461,393	(5,089)-2,131	(87,355)-(74,829)	107,917-388,695
<sup>1</sup> Figures are rounded. Assuming City of Antioch receives all of sales and franchise fee tax revenues.				
Source: Gruen Gruen + Associates				

Based on the estimates presented in the preceding chapters, following the annexation of Area 1, Area 2a, and Area 2b, the City of Antioch is estimated to collect \$273,000 to \$554,000 of potential total annual revenue. To provide public services is estimated to induce General Fund costs of \$165,400 for a positive net operating balance of \$108,000 to \$390,000. Area 1 is estimated to produce a positive operating balance of approximately



## THE FISCAL IMPACTS OF THE NORTHEAST ANTIOCH ANNEXATION

\$201,000 to \$461,000. Area 2a is estimated to produce a small deficit of -\$5,000 or very small positive balance of \$2,000, while Area 2b is estimated to produce \$75,000 to \$87,000 more operating costs than operating revenues.

Table V-2 presents a comparison of forecast annual General Fund revenues and annual service costs likely to be induced from the annexation of Area 1, Area 2a, and Area 2b at the full build-out condition, assuming the City of Antioch receives all of the sales tax and franchisee fee revenue.

<b>TABLE V-2</b>				
<b>Relationship Between Annual Revenues and Annual Operating Costs at the Full Build-out of The Annexation of the Northeast Antioch Area<sup>1</sup></b>				
	Annexation at Build-out			
	\$			
	Area 1	Area 2a	Area 2b	Total
Annual Revenues	1,536,264-2,056,337	273,325-321,638	17,414-29,940	1,827,003-2,407,915
Annual Operating Costs	326,426	272,308	104,769	703,503
Estimated Balance	1,209,838-1,729,911	1,017-49,330	(87,355)-(74,829)	1,123,500-1,704,412
<sup>1</sup> Figures are rounded. Assuming City of Antioch receives all of sales tax and franchise fee revenues.				
Source: Gruen Gruen + Associates				

Based on the estimates presented in the preceding chapters, at the full built-out condition of the Northeast Antioch area, the City of Antioch is estimated to collect \$1.8 million to \$2.4 million of potential total annual revenue, assuming the City of Antioch receives all of the sales tax and franchise fee revenues resulting from the proposed annexation. To provide public services is estimated to induce annual General Fund costs of approximately \$703,500 for a positive a net operating balance of \$1.1 million to \$1.3 million. Area 1 is estimated to produce a positive balance of \$1.2 million to \$1.7 million, while Area 2a is estimated to produce a very small positive balance of \$1,000 to \$49,000. Area 2b is estimated to produce a negative balance of \$75,000 to \$87,000 in more operating costs than revenues.

Assuming that the City of Antioch receives all of the sales tax and franchise fee revenues, taxes and fees associated with the proposed Mirant Plant and PG&E Generating Station are estimated to generate a total of \$725,000 to \$1.1 million. The Mirant Plant and PG&E Generating Station are estimated to account for between 40 percent and 46 percent of the total revenues available to offset costs of providing operating services and capital facilities to the annexation area. The revenue from these sources alone would offset all operating costs for the entire annexation area. As reviewed below, however, the net revenue would not be sufficient to support the costs of financing all of the capital facilities improvements for Area 1, Area 2a, and Area 2b.



**RELATIONSHIP BETWEEN ANNUAL REVENUES  
AND ANNUAL OPERATING COSTS FOLLOWING  
COMPLETION OF THE ANNEXATION OF THE NORTHEAST  
ANTIOCH AREA ASSUMING ANTIOCH RECEIVES ONE HALF OF  
THE SALES TAX REVENUE AND NO FRANCHISE FEE TAX REVENUE**

Table V-3 summarizes the relationship between forecast annual revenues and annual operating costs following completion of the annexation of the Northeast Antioch area assuming the City of Antioch receives one half of the sales tax revenue but none of the franchise fee tax revenue.

<b>TABLE V-3</b>				
<b>Relationship Between Annual Revenues and Annual Operating Costs Following Completion of The Annexation of the Northeast Antioch Area<sup>1</sup></b>				
	Following Annexation \$			
	Area 1	Area 2a	Area 2b	Total
Annual Revenues	172,597-433,356	5,075-12,295	11,876-24,402	189,548-470,053
Annual Operating Costs	35,286	25,354	104,769	165,409
Estimated Balance	137,311-398,070	(13,059) -(20,279)	(80,367) -(92,893)	24,139-304,644
<sup>1</sup> Figures are rounded. Assuming City of Antioch receives one half of sales tax revenue and no franchise fee tax revenues.				
Source: Gruen Gruen + Associates				

Based on the estimates presented in the preceding chapters, following completion of the proposed annexation of the Northeast Antioch area, the City of Antioch is estimated to collect approximately \$190,000 million to \$470,000 of potential total annual revenue, assuming the City of Antioch receives one half of the sales tax and none of the franchise fee revenue resulting from the proposed annexation. To provide public services is estimated to induce annual General Fund costs of approximately \$165,000 for a positive a net operating balance of approximately \$24,000 to \$305,000. Area 1 is estimated to produce a positive balance of approximately \$137,000 to \$398,000, while Area 2a is estimated to produce a negative balance of approximately -\$13,000 to -\$20,000. Area 2b is estimated to produce a negative balance of approximately \$80,000 to \$93,000 in more operating costs than revenues.

Table V-4 presents a comparison of forecast annual General Fund revenues and annual service costs likely to be induced by the annexation of Area 1, Area 2a, and Area 2b at the full build-out condition, assuming the City of Antioch received one half of the sales tax and none of the franchise fee revenue.



## THE FISCAL IMPACTS OF THE NORTHEAST ANTIOCH ANNEXATION

**TABLE V-4**

**Relationship Between Annual Revenues and  
Annual Operating Costs At the Full Build-out  
of The Annexation of the Northeast Antioch Area<sup>1</sup>**

	Annexation at Build-out			
	\$			
	Area 1	Area 2a	Area 2b	Total
Annual Revenues	928,887-1,448,960	139,118-187,485	11,876-24,402	1,079,881-1,660,847
Annual Operating Costs	326,426	272,308	104,769	703,503
Estimated Balance	602,461-1,122,534	(84,823)-(133,190)	(89,367)-(92,893)	376,378-957,344
<sup>1</sup> Figures are rounded. Assuming City of Antioch receives one-half of sales tax revenue and no franchise fee tax revenues.				
Source: Gruen Gruen + Associates				

Based on the estimates presented in the preceding chapters, at the full built-out condition of the Northeast Antioch area, the City of Antioch is estimated to collect approximately \$1.1 million to nearly \$1.7 million of potential total annual revenue, assuming the City of Antioch receives one half of the sales tax and none of the franchise fee revenues resulting from the proposed annexation. To provide public services is estimated to induce annual General Fund costs of approximately \$703,500 for a positive a net operating balance of approximately \$376,000 to \$957,000. Area 1 is estimated to produce a positive balance of approximately \$602,500 to \$1.1 million, while Area 2a is estimated to produce a negative balance of about \$85,000 to \$133,000 more in operating costs than in revenues. Area 2b is estimated to produce a negative balance of approximately \$89,000 to \$93,000 more in operating costs than in revenues.

Assuming that Antioch is not allocated any franchise fee revenue and only one-half of the sales tax revenue, taxes and fees associated with the proposed Mirant Plant and PG&E Generating Station are estimated to generate a total of \$721,000 to \$1.1 million or 67 percent of total revenue resulting from the annexation. The revenues from the PG&E Generating Plant and proposed Mirant plant are estimated to be sufficient to offset all of the operating costs induced by the proposed annexation. The positive balance, however, will not be sufficient to support all of the costs of financing the needed capital facilities.



CHAPTER VI

**REQUIRED CAPITAL FACILITY IMPROVEMENTS AND  
ESTIMATES OF COSTS TO PROVIDE CAPITAL FACILITIES**

Carlson, Barbee & Gibson, Inc. has prepared the following summary of the infrastructure improvements needed to cure the deficiencies described above and has estimated the costs of the needed improvements. The existing infrastructure in the Northeast Antioch annexation area would need considerable improvements to be brought up to the standards of the City of Antioch. The total estimated cost for these improvements is \$67,621,000, which includes construction costs as well as costs for professional services. The total estimated construction cost for the entire Northeast Antioch annexation area is \$51,035,000. A 25 percent contingency is incorporated to account for additional construction costs that may occur when more detailed plans are available. The 25 percent contingency amount is consistent with preliminary roadway estimates prepared elsewhere within the City. A detailed cost estimate for each area is included in Appendix B. Table VI-1 below provides a summary of the estimated total construction costs for Area 1, Area 2a, and Area 2b.

TABLE VI-1				
Infrastructure Cost Estimate Summary at the Full Build-out of The Annexation of the Northeast Antioch Area				
	Annexation at Build-out			
	\$			
	Area 1	Area 2a	Area 2b	Totals <sup>2</sup>
Infrastructure Construction Cost	21,623,000	7,912,000	11,293,000	40,828,000
25% Contingency <sup>1</sup>	5,405,750	1,978,000	2,823,250	10,207,000
<b>Total Construction Costs<sup>2</sup></b>	<b>27,029,000</b>	<b>9,890,000</b>	<b>14,116,000</b>	<b>51,035,000</b>
<sup>1</sup> 25 percent contingency is added to this estimate to account for additions to the construction cost when more detailed designs become available.				
<sup>2</sup> Figures are rounded to the nearest thousand.				
Source: Carlson, Barbee & Gibson, Inc.				



## THE FISCAL IMPACTS OF THE NORTHEAST ANTIOCH ANNEXATION

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The estimated construction cost for Area 1 is \$21,623,000. The majority of this cost is in reconstructing 10,000 feet of Wilbur Avenue, which is estimated to cost \$20,624,900. The following is a summary of improvements for this road:

- Right of way acquisition for road widening;
- Street Improvements – additional travel lanes and median lane, new street section, curb, gutter, sidewalk, and landscaping;
- Construct storm drain improvements and water quality devices;
- Extend 15” sanitary sewer and provide service to each parcel;
- Connect water service to each parcel by tapping into the existing water line and replacing existing fire hydrants;
- Install recycled water line and lateral services to each parcel; and
- Underground existing 21 Kv power line and relocate existing 60 Kv power line.

Approximately five percent of the construction costs for Area 1 are for improving portions of Minnaker Avenue and Viera Avenue (see Appendix B for details).

Area 2A is estimated to cost \$7,912,000 which includes Fleming Avenue connecting to Bridgehead Road. The estimated improvements to this street are as follows:

- Right of way acquisition for road widening;
- Street improvements – new street section, curb, gutter, sidewalk, and landscaping;
- Storm drain improvements, new outfall to San Joaquin River, and replacement of existing storm drain regional trunk line;
- Sanitary sewer construction and laterals to each parcel;
- Water line construction and laterals to each parcel; and
- Relocate existing power lines.

Area 2B is estimated to cost \$11,293,000 which includes construction of 1.6 miles of residential roads. The estimate is comprised of the following roads: Viera Avenue, Santa Fe Avenue, Walnut Avenue, Bown Lane, Vine Lane, Stewart Lane, St. Claire Drive, Trembath Lane, and Mike Yorba Way. Each of these roads will be improved to city standard. Costs with improving East 18<sup>th</sup> Street and Wymore Way are not included in this estimate. The following costs are included:

- Right of way acquisition for road widening;
- Street improvements – new street section, curb, gutter, sidewalk, and landscaping;
- Storm drain improvements and two new trunk storm drain lines to existing regional detention basins;
- Sanitary sewer construction and laterals to each parcel;
- Water line construction and laterals to each parcel; and
- Relocate existing power lines.





## THE FISCAL IMPACTS OF THE NORTHEAST ANTIOCH ANNEXATION

In addition to the estimated total construction cost, costs for various professional services will be incurred with the capital improvement project. These costs are detailed below and are summarized in Table VI-2:

- Environmental and Biological Mitigation at two percent of the total construction cost which includes identifying, permitting, and mitigating any impacts from the proposed infrastructure improvements;
- Archaeological Mitigation at 0.5 percent of the total construction cost which includes costs associated with possible archaeological issues;
- Design Services at nine percent of the total construction cost which includes civil, geotechnical, transportation, and hydrological engineering plans and services;
- Construction Services at six percent of the total construction cost which includes site staking, testing, and various special inspections;
- City Plan Check and Inspection Fees at six percent of the total construction cost;
- Bonding and Insurance costs at 2.5 percent of the estimated total construction cost;
- Contract Administration at two percent of the total construction cost; and
- Construction Management services at four percent of the total construction cost.

<b>TABLE VI-2</b>				
<b>Estimate of Professional Services As a Percentage of Construction Cost at the Full Build-out of The Annexation of the Northeast Antioch Area</b>				
	Annexation at Build-out			
	\$			
	Area 1	Area 2a	Area 2b	Totals <sup>1</sup>
Environmental / Biological Mitigation – 2.0%	540,580	197,800	282,325	1,021,000
Archaeological Mitigation – 0.5%	135,140	49,450	70,580	255,000
Design Services – 9.0%	2,432,590	890,100	1,270,460	4,593,000
Construction Services – 6.0%	1,621,730	593,400	846,980	3,062,000
City Plan Check & Inspection – 6.5%	1,756,870	642,850	917,560	3,317,000
Bonding & Insurance – 2.5%	675,720	247,250	352,910	1,276,000
Contract Administration – 2.0%	540,580	197,800	282,325	1,021,000
Construction Management – 4.0%	1,081,150	395,600	564,650	2,041,000
<b>Total Estimate of Professional Services<sup>1</sup></b>	<b>8,784,000</b>	<b>3,214,000</b>	<b>4,588,000</b>	<b>16,586,000</b>
<sup>1</sup> Figures are rounded to the nearest thousand.				
Source: Carlson, Barbee & Gibson, Inc.				



## THE FISCAL IMPACTS OF THE NORTHEAST ANTIOCH ANNEXATION

---

The estimate of total construction costs and professional services is shown in Table VI-3.

<b>TABLE VI-3</b>				
<b>Estimate of Total Construction Cost and Professional Services at the Full Build-out of The Annexation of the Northeast Antioch Area</b>				
	Annexation at Build-out \$ <sup>1</sup>			
	Area 1	Area 2a	Area 2b	Totals
Total Construction Costs	27,029,000	9,890,000	14,116,000	51,035,000
Total Estimate of Professional Services	8,784,000	3,214,000	4,588,000	16,586,000
<b>Total Estimate of Construction Cost &amp; Professional Services</b>	<b>35,813,000</b>	<b>13,104,000</b>	<b>18,204,000</b>	<b>67,721,000</b>
<sup>1</sup> Figures are rounded to the nearest thousand.				
Source: Carlson, Barbee & Gibson, Inc.				



## CHAPTER VII

### ESTIMATED CAPACITY TO FINANCE REQUIRED CAPITAL FACILITIES

The tables below present estimates of the amounts of capital facilities debt financing the estimated net annual fiscal balance between annual operating revenues and operating expenditures could support. That is, we draw on the estimates of the balance between annual revenues and operating expenditures estimated to be associated with the annexation to identify how many dollars of needed capital facilities could the net fiscal operating balance support assuming that the balance could be used to secure and fund capital costs associated with bringing the annexation area up to City standards. Table VII-3 is perhaps the most interesting because it reflects the assumption that the only additional build-out beyond the PG&E Generating Station is the proposed Mirant power plant.

Table VII-1 shows the estimated debt capacity of the annual revenues of the Northeast Antioch Annexation Area in the first year following annexation.



TABLE VII-1	
Debt Capacity of Northeast Antioch Annexation Area Following Annexation Under Two Differing Assumptions Regarding Amount of Property Tax Received by City of Antioch <sup>1</sup>	
	\$
Net Annual Fiscal Balance to City of Antioch (Revenues Less Operating Expenses) <sup>2</sup>	
Assuming City Tax Rate of 9.8%	388,695
Assuming Master Tax Agreement of 3.6%	107,917
Net Annual Fiscal Balance Less Required Coverage @ 1.25x	
Assuming City Tax Rate of 9.8%	310,956
Assuming Master Tax Agreement of 3.6%	86,334
Gross Debt Capacity <sup>3</sup>	
Assuming City Tax Rate of 9.8%	3,986,800
Assuming Master Tax Agreement of 3.6%	1,106,900
Net Debt Capacity <sup>4</sup>	
Assuming City Tax Rate of 9.8%	3,468,500
Assuming Master Tax Agreement of 3.6%	963,000
<sup>1</sup> PG&E Generating Station is included in annexation area. Assumes City of Antioch receives all of the sales tax and franchise fee revenue.	
<sup>2</sup> Figures drawn from Table V-1.	
<sup>3</sup> Present value of net income stream over 20-year period discounted at five percent. Figures are rounded	
<sup>4</sup> Assumes cost of debt issuance of three percent and reserve fund of 10 percent. Figures are rounded	
Source: Gruen Gruen + Associates	

Following annexation, the annual fiscal operating balance (i.e., net available revenues or the difference between estimated revenues from property taxes and other sources and operating expenditures from providing municipal services as shown on Table V-1) to the City of Antioch is estimated to range from approximately \$107,900 to \$388,700. The lower end of the range reflects the assumption that the Master Tax Agreement applies and the higher end of the range reflects the assumption that the City obtains property tax as if the property was already within the City's jurisdiction.

To make an estimate of the amount of net annual revenues that could be used to fund and secure future debt payments, we assumed a debt coverage ratio of 1.25 times. The net annual fiscal balance to finance debt ranges from \$86,300 to \$311,000. Discounting this range of net annual revenues over a 20 year period at five percent results in total debt capacity of approximately \$1.1 million to \$4.0 million. We assume debt issuance costs of three percent and a reserve fund of 10 percent will need to be paid from the gross debt



## THE FISCAL IMPACTS OF THE NORTHEAST ANTIOCH ANNEXATION

proceeds. These assumptions result in estimated net debt capacity of nearly \$1.0 million to \$3.5 million generated following annexation of the Northeast Antioch Area.

Table VII-2 shows the estimated debt capacity of the Northeast Antioch Annexation Area at full build-out of the annexed area as described in Chapter II.

<b>TABLE VII-2</b>  <b>Debt Capacity of Northeast Antioch Annexation Area</b> <b>At Full Build-out Under Two Differing Assumptions</b> <b>Regarding Amount of Property Tax Received by City of Antioch<sup>1</sup></b>	
	\$
Net Annual Fiscal Balance to City of Antioch (Revenues Less Operating Expenses) <sup>2</sup>	
Assuming City Tax Rate of 9.8%	1,704,412
Assuming Master Tax Agreement of 3.6% in Base Yr. and 7.2% on Tax Increment	1,123,500
Net Annual Fiscal Balance Less Required Coverage @ 1.25x	
Assuming City Tax Rate of 9.8%	1,363,530
Assuming Master Tax Agreement of 3.6% in Base Yr. and 7.2% on Tax Increment	898,800
Gross Debt Capacity <sup>3</sup>	
Assuming City Tax Rate of 9.8%	17,482,000
Assuming Master Tax Agreement of 3.6% in Base Yr. and 7.2% on Tax Increment	11,523,700
Net Debt Capacity <sup>4</sup>	
Assuming City Tax Rate of 9.8%	15,209,400
Assuming Master Tax Agreement of 3.6% in Base Yr. and 7.2% on Tax Increment	10,025,600
<sup>1</sup> PG&E Generating Station and Mirant Marsh Landing is included in annexation area. Assumes City of Antioch receives all of the sales tax and franchise fee revenue. <sup>2</sup> Figures drawn from Table V-2. <sup>3</sup> Present value of net income stream over 20-year period discounted at five percent. Figures are rounded <sup>4</sup> Assumes cost of debt issuance of three percent and reserve fund of 10 percent. Figures are rounded.	
Source: Gruen Gruen + Associates	

At build-out, the annual fiscal balance (i.e., net available revenues as shown on Table V-2) to the City of Antioch is estimated to range from approximately \$1.1 million to \$1.7 million depending upon whether the Master Tax Agreement or City's current average property tax rate is assumed to apply. Assuming a required debt coverage ratio of 1.25, the net annual fiscal balance to fund debt ranges from nearly \$900,000 to over \$1.3 million. Discounting



this range of net annual revenues over a 20 year period at five percent results in estimated total debt capacity of approximately \$11.5 million to \$17.5 million. We assume debt issuance costs of three percent and a reserve fund of 10 percent will need to be paid from the gross debt proceeds. These assumptions result in estimated net debt capacity of nearly \$10.0 million to \$15.2 million generated from the build-out of the annexation of the Northeast Antioch Area.

Table 3 shows the estimated debt capacity of the Northeast Antioch Annexation Area under the assumption that following annexation, the only future development that occurs is the development of Mirant Marsh Landing. It also reflects the development and operation of the PG&E Gateway Generating Station.





<b>TABLE 3</b>	
<b>Debt Capacity of Northeast Antioch Annexation Area Assuming Only Mirant Marsh Landing is Built Under Two Differing Assumptions Regarding Amount of Property Tax Received by City of Antioch<sup>1</sup></b>	
	<b>\$</b>
Net Annual Fiscal Balance to City of Antioch (Revenues Less Operating Expenses) <sup>2</sup>	
Assuming City Tax Rate of 9.8%	1,168,338
Assuming Master Tax Agreement of 3.6% in Base Yr. and 7.2% on Tax Increment	679,832
Net Annual Fiscal Balance Less Required Coverage @ 1.25x	
Assuming City Tax Rate of 9.8%	934,671
Assuming Master Tax Agreement of 3.6% in Base Yr. and 7.2% on Tax Increment	543,866
Gross Debt Capacity <sup>2</sup>	
Assuming City Tax Rate of 9.8%	11,983,600
Assuming Master Tax Agreement of 3.6% in Base Yr. and 7.2% on Tax Increment	6,973,000
Net Debt Capacity <sup>3</sup>	
Assuming City Tax Rate of 9.8%	10,425,700
Assuming Master Tax Agreement of 3.6% in Base Yr. and 7.2% on Tax Increment	6,066,500
<sup>1</sup> PG&E Generating Station and Mirant Marsh Landing is included in annexation area. Assumes City of Antioch receives all of the sales tax and franchise fee revenue. <sup>2</sup> Present value of net income stream over 20-year period discounted at five percent. Figures are rounded <sup>3</sup> Assumes cost of debt issuance of three percent and reserve fund of 10 percent. Figures are rounded.	
Source: Gruen Gruen + Associates	

If only Mirant Marsh Landing is developed in the Northeast Antioch Annexation Area and including the PG&E Gateway Generating Station but no other future development, the annual fiscal balance (i.e., net available revenues after deducting for operating expenditures induced by service demands to the Annexation Area) to the City of Antioch is estimated to range from approximately \$679,800 to nearly \$1.2 million. From the net annual revenues, we assumed a debt coverage ratio of 1.25 times. The net annual fiscal balance to fund debt ranges from approximately \$544,000 to over \$934,000. Discounting this range of net annual revenues over a 20 year period at five percent results in estimated total debt capacity of approximately \$7.0 million to \$12.0 million. We assume debt issuance costs of three percent and a reserve fund of 10 percent will need to be paid from the gross debt proceeds. This results in estimated net debt capacity of nearly \$6.1 million to \$10.4 million generated



following annexation of the Northeast Antioch Area.

Lengthening the period over which revenues accrue to the City of Antioch and/or the amount of property tax shared between the County and City would result in higher annual net revenues and therefore larger debt funding capacity.

But based on the current estimate of \$67 million in needed capital facilities upgrades, the initial financial analysis suggests a much more favorable arrangement will need to be made with the County than was made under the Pittsburg agreement.



APPENDIX A

TABLE A-1				
Land Use, Demographic, and Employment Characteristics and Assessed Value For Area 1 in Northeast Antioch Annexation Area in Future Build-out Year				
<i>Built Space</i>	Acreage #	Building Space Square Feet #	Number of Employees or Residents #	Assessed Valuation in Build-out Year \$
Georgia Pacific	36.5	196,000	97	22,965,078
PG&E Gateway Generating Station	21.44		21.5	350,000,000
Mirant Contra Costa	147.26	N/A	40	34,135,351
Mirant Marsh Landing	N/A <sup>2</sup>	N/A	20	800,000,000
Other Industrial	15.11	17,269	17	2,701,225
Residential	0.35		N/A	47,193
Total Built	220.66	213,269	176	1,209,848,847
<i>Vacant Land (taxable)</i>				
Land north of Wilbur Avenue <sup>1</sup>	138.25	1,505,543 <sup>3</sup>	753 <sup>3</sup>	120,443,400 <sup>3</sup>
Land south of Wilbur Avenue <sup>1</sup>	29.72	453,111 <sup>4</sup>	906 <sup>4</sup>	88,356,668 <sup>4</sup>
Other industrial land	0.30	0	0	6,699
Total Vacant	168.27	1,958,645	1,659	208,806,767
TOTAL	388.93	2,171,923	1,855	1,418,655,614
<sup>1</sup> PG&E land included in acreage is assessed by State of California Board of Equalization and is not included in total 2008 assessed valuation.				
<sup>2</sup> Land area included in total land area for Mirant Contra Costa.				
<sup>3</sup> Assumes floor-area ratio of 0.25; employment density of 0.5 employees per 1,000 square feet of built space; and building cost of \$80 per square foot built space (including land value).				
<sup>4</sup> Assumes floor-area ratio of 0.35; employment density of 2 employees per 1,000 square feet of built space and building cost of \$195 per square foot of built space (including land value).				
Sources: Contra Costa County Assessor; Colliers International; 2000 Census; Gruen Gruen + Associates.				



Table A-2				
Land Use, Demographic, and Employment Characteristics and Assessed Value for Area 2a in Northeast Antioch Annexation Area in Future Build-out Year				
<i>Built Space</i>	Acreage #	Building Space Square Feet #	Number of Employees or Residents #	Assessed Valuation in Build-out Year \$
Light Industrial <sup>1</sup>	56.06	767,452	1,529	153,746,977
Commercial Boat Harbors	34.43	5,145	10	4,051,248
Residential	3.06	0	9	442,656
TOTAL	93.55	772,597	1,529 employees 9 residents	158,240,881
<sup>1</sup> Assumes 46.3 acres are redeveloped more intensively at a floor-area ratio of 0.35; employment density of two employees per 1,000 square feet of built space; and building cost of \$195 per square foot of built space (including land value).				
Sources: Contra Costa County Assessor; City of Antioch; 2000 Census; Colliers International; Gruen Gruen + Associates.				





ENGINEER'S PRELIMINARY INFRASTRUCTURE COST ESTIMATE  
**NORTHEAST ANTIOCH REORGANIZATION**  
**(~715 ACRES) (~4 MILES)**  
ANTIOCH, CALIFORNIA

January 9, 2009  
Job No.: 1622-000

Description		Amount
<b><u>SUMMARY</u></b>		
INFRASTRUCTURE AREA 1	\$	21,623,000.00
INFRASTRUCTURE AREA 2A	\$	7,912,000.00
INFRASTRUCTURE AREA 2B	\$	11,293,000.00
SUBTOTAL CONSTRUCTION COST	\$	40,828,000.00
25% CONTINGENCY	\$	10,207,000.00
<b>TOTAL ESTIMATE OF CONSTRUCTION COST</b>	<b>\$</b>	<b>51,035,000.00</b>
<b><u>ESTIMATE OF PROFESSIONAL SERVICES AS A PERCENTAGE OF CONSTRUCTION COST</u></b>		
ENVIRONMENTAL / BIOLOGICAL MITIGATION 2.0%	\$	1,021,000.00
ARCHAEOLOGICAL MITIGATION 0.5%	\$	255,000.00
DESIGN SERVICES 9.0%	\$	4,593,000.00
CONSTRUCTION SERVICES 6.0%	\$	3,062,000.00
CITY PLAN CHECK & INSPECTION 6.5%	\$	3,317,000.00
BONDING & INSURANCE 2.5%	\$	1,276,000.00
CONTRACT ADMINISTRATION 2.0%	\$	1,021,000.00
CONSTRUCTION MANAGEMENT 4.0%	\$	2,041,000.00
<b>TOTAL ESTIMATE OF CONSTRUCTION COST &amp; PROFESSIONAL SERVICES</b>	<b>\$</b>	<b>67,621,000.00</b>



ENGINEER'S PRELIMINARY INFRASTRUCTURE COST ESTIMATE

**NORTHEAST ANTIOCH REORGANIZATION**

**ASSUMPTIONS**

ANTIOCH, CALIFORNIA

January 9, 2009

Job No.: 1622-000

**Item Description**

**General Assumptions**

- 1 The following streets are included in this estimate per the direction of the City of Antioch:
  - Wilbur Avenue (~10,000 LF) - from the West Side of the Highway 160 Overpass to the East Side of the Santa Fe Railroad Overpass
  - Viera Avenue (~2640 LF) - from the North Side of the 18th Street Intersection to the Wilbur Avenue Intersection
  - Minnaker Avenue (~240 LF) - from the South Side of the Santa Fe Railroad right of way to the end of Cul-de-sac
  - Fleming Road (~2430 LF) - from the Wilbur Avenue intersection to the West Side of the Highway 160 Overpass at Bridgehead Road
  - Santa Fe Avenue (~600 LF)
  - Walnut Avenue (~800 LF)
  - Bown Avenue (~600 LF)
  - Vine Lane (~890 LF)
  - Stewart Lane (~350 LF)
  - St. Claire Drive (~1,200 LF)
  - Trembath Lane (~980 LF)
  - Mike Yorba Way (~250 LF)
- 2 This following resources were used to prepare this estimate:
  - Site Visits/Photographs
  - Existing Utility Maps provided by the City of Antioch
  - 10' Contour Maps of Contra Costa County
  - Contra Costa County Basemaps
  - FEMA Flood Insurance Rate Maps
  - Contra Costa County Flood Control Drainage Area Maps
  - PGE Gateway Sewer Plans dated August 2008
  - Initial Study and Negative Declaration - Northeast Antioch Reorganization dated March 2008
  - Northeast Antioch Annexation Feasibility Study dated January 2005
- 3 Environmental remediation and mitigation costs are included as a percentage of the construction cost.
- 4 Archaeological mitigation costs are included as a percentage of the construction cost.
- 5 \$500,000 per building structure is included for the acquisition and demolition of existing structures within the proposed right of way.
- 6 The following items are not included:
  - A fee credit analysis
  - Any "Public Financing"
  - Any Reimbursements



Item	Description
<b><u>Grading Assumptions</u></b>	
7	Costs associated with remedial grading and unsuitable material removal are included at 25% of the rough grading volumes.
8	Detailed grading or earthwork studies were not prepared.
<b><u>Street Improvement Assumptions</u></b>	
9	Infrastructure and backbone roads street sections are as follows: <ul style="list-style-type: none"> <li>- Wilbur Avenue (102' ROW) - (4) 12' Lanes, 16' Median Turn Lane, 8' Shoulders, 6' Landscape, 5' Detached Sidewalks</li> <li>- Viera Avenue (60' ROW) - (2) 12' Lanes, 8' Shoulders, 5' Landscape, 5' Detached Sidewalks</li> <li>- Minnaker Avenue (60' ROW) - (2) 12' Lanes, 8' Shoulders, 10' Sidewalks</li> <li>- Residential Street (56' ROW) - (2) 12' Lanes, 8' Shoulders, 5' Monolithic Sidewalks, 5' Landscape</li> </ul>
10	All existing street sections and pavements will be removed and replaced with new street sections and pavements.
11	Bridge improvements at the railroad overpass on Wilbur Ave. are not included.
12	The existing Santa Fe railroad crossings on Viera and Minnaker are considered to be active and are included to be repaired. The 5 existing crossings on Wilbur are considered inactive and are included to be removed.
13	Right of Way and Easement Acquisition areas were determined using the Contra Costa County Base maps; actual areas will vary.
14	Additional Traffic Signals are not included.
15	Improvements to Wymore Way are not included.
16	Improvements to E. 18th Street are not included.
<b><u>Storm Drain Assumptions</u></b>	
17	Existing facilities that would serve these roads are adequately sized. Increasing the capacity of the existing infrastructure is not required.
18	Proposed storm drain lines can gravity flow to the existing facilities.
19	Mechanical water quality systems for the proposed streets are included to comply with water quality standards.
20	Detailed hydrological studies were not prepared. Portions of the site are within Contra Costa County Flood Control Drainage Areas 29G and 29J.
<b><u>Sanitary Sewer Assumptions</u></b>	
21	Existing facilities that would serve these roads are adequately sized. Increasing the capacity of the existing infrastructure is not required.
22	The proposed sewer lines can gravity flow to the existing facilities.
23	Detailed sewer studies were not prepared.

Item	Description
------	-------------

**Water Supply Assumptions**

- |    |  |
|----|--|
| 24 | Existing facilities that would serve these roads are adequately sized. Increasing the capacity of the existing infrastructure is not required. |
| 25 | Detailed water studies were not prepared.  |

**Dry Utility Assumptions**

- |    |  |
|----|--|
| 26 | The existing 12/21 Kv portion of the overhead lines on Wilbur Ave. will be relocated underground. The existing 60 Kv portion of the overhead lines on Wilbur Ave. will be relocated outside of the proposed right of way.        |
| 27 | The existing 12/21/60 Kv overhead lines on the remaining streets will be relocated.  |
| 28 | Overhead service lines to serve existing residences will not be relocated underground as this may change the service point to the building, require additional easements, and/or require modifications to the existing building. |



### ENGINEER'S PRELIMINARY INFRASTRUCTURE COST ESTIMATE

#### NORTHEAST ANTIOCH REORGANIZATION

##### AREA 1

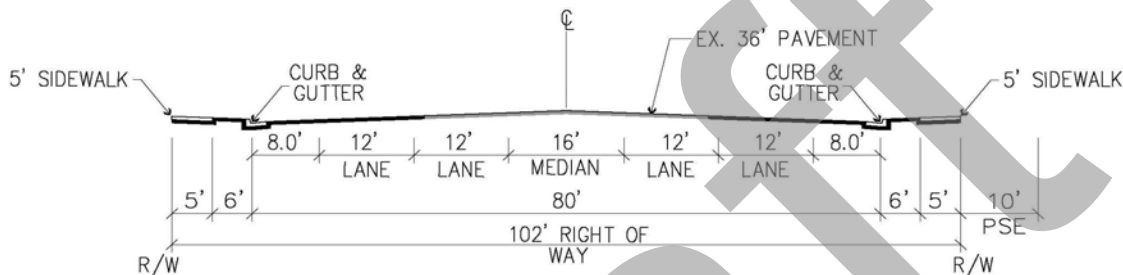
#### WILBUR AVENUE (~10,000 LF)<sup>1</sup>

ANTIOCH, CALIFORNIA

January 9, 2009

Job No.: 1622-000

Item Description	Quantity	Unit	Unit Price	Amount
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#### LAND ACQUISITION

1	Right of Way Acquisition	250,000	SF	\$	5.00	\$	1,250,000.00
2	Public Service Easement Acquisition (10' PSE one side)	100,000	SF	\$	2.50	\$	250,000.00
3	Temporary Construction Easements (10' each side)	200,000	SF	\$	1.00	\$	200,000.00
Subtotal Land Acquisition							\$ 1,700,000.00

#### STREET IMPROVEMENTS

4	Demo Existing Pavement & Section (~36' Wide Existing)	360,000	SF	\$	1.00	\$	360,000.00
5	Rough Grade Street Section (80' Wide) (3.0' Cut) <sup>2</sup>	88,900	CY	\$	20.00	\$	1,778,000.00
6	Remedial Grading/Unsuitable Materials (25% of Rough Grade Volume)	22,225	CY	\$	20.00	\$	444,500.00
7	Street Fine Grading (Full RW Width)	1,000,000	SF	\$	0.40	\$	400,000.00
8	5" AC Pavement (77' Wide Section Proposed)	770,000	SF	\$	2.00	\$	1,540,000.00
9	25" Aggregate Base (77' Wide Section Proposed)	770,000	SF	\$	3.75	\$	2,887,500.00
10	Curb & Gutter (Includes Cushion)	20,000	LF	\$	18.00	\$	360,000.00
11	5' Detached Sidewalk (Includes Cushion)	100,000	SF	\$	4.00	\$	400,000.00
12	5.5' Parkway Landscape & Irrigation	110,000	SF	\$	5.00	\$	550,000.00
13	Geotextile Fabric	800,000	SF	\$	0.20	\$	160,000.00
14	Street Monuments (Assumed @ 1,000')	10	EA	\$	300.00	\$	3,000.00
15	Signing & Striping	10,000	LF	\$	10.00	\$	100,000.00
16	Traffic Control	10,000	LF	\$	50.00	\$	500,000.00
17	Driveway Approaches	40	EA	\$	750.00	\$	30,000.00
18	Remove & Replace Existing Fencing	20,000	LF	\$	15.00	\$	300,000.00
19	Remove Existing Railroad Arms	2	EA	\$	3,000.00	\$	6,000.00
20	Remove Existing Railroad Tracks	5	EA	\$	2,000.00	\$	10,000.00
21	Protect Existing Waterline	10,000	LF	\$	10.00	\$	100,000.00
22	Protect Existing Fiber Optic	10,000	LF	\$	10.00	\$	100,000.00
23	Protect Existing Gas Line	10,000	LF	\$	10.00	\$	100,000.00

Subtotal Street Improvements

\$ 10,129,000.00

Item Description	Quantity	Unit	Unit Price	Amount
<b><u>STORM DRAIN</u></b>				
24 Remove Existing 42"and 36" SD Pipes on Wilbur	2,750	LF	\$ 20.00	\$ 55,000.00
25 24" Storm Drain Pipe	5,000	LF	\$ 72.00	\$ 360,000.00
26 36" Storm Drain Pipe	5,000	LF	\$ 108.00	\$ 540,000.00
27 18" Storm Drain Crossings (80' each @ 300')	2,700	LF	\$ 54.00	\$ 145,800.00
28 Catch Basins (Assumed 2 @ 300')	67	EA	\$ 3,000.00	\$ 200,000.00
29 Manholes (Assumed @ 500')	20	EA	\$ 3,500.00	\$ 70,000.00
30 Water Quality Filters (Assumed @ 1,000')	10	EA	\$ 35,000.00	\$ 350,000.00
Subtotal Storm Drain				\$ 1,720,800.00
<b><u>SANITARY SEWER</u></b>				
31 15" VCP Sanitary Sewer Pipe	7,580	LF	\$ 120.00	\$ 909,600.00
32 Manholes (Assumed @ 400')	20	EA	\$ 3,500.00	\$ 70,000.00
33 Connect to Existing Sewer Pipe	1	EA	\$ 1,500.00	\$ 1,500.00
34 Sewer Laterals	40	EA	\$ 1,000.00	\$ 40,000.00
Subtotal Sanitary Sewer				\$ 1,021,100.00
<b><u>WATER SUPPLY</u></b>				
35 Connect Water Laterals to Existing Main (Includes trench and hot tap)	40	EA	\$ 2,500.00	\$ 100,000.00
36 Connect Fire Service to Existing Main (Includes trench and hot tap)	40	EA	\$ 2,500.00	\$ 100,000.00
37 Fire Hydrant (Assumed @ 400') <sup>3</sup>	25	EA	\$ 4,000.00	\$ 100,000.00
38 Irrigation Controller (Assumed @ 2,000')	5	EA	\$ 25,000.00	\$ 125,000.00
Subtotal Water Supply				\$ 425,000.00
<b><u>RECYCLED WATER SUPPLY</u></b>				
39 Recycled Water Line 8" PVC	10,000	LF	\$ 60.00	\$ 600,000.00
40 Recycled Water Laterals	40	EA	\$ 1,000.00	\$ 40,000.00
Subtotal Recycled Water Supply				\$ 640,000.00
<b><u>ELECTRICAL IMPROVEMENTS</u></b>				
41 21 Kv Underground Conversion	10,000	LF	\$ 275.00	\$ 2,750,000.00
42 Relocate Existing 60 Kv Overhead Pole Line	60	EA	\$ 25,000.00	\$ 1,500,000.00
43 Streetlights (1 @ 120') (Cobrahead Type)	83	EA	\$ 3,000.00	\$ 249,000.00
44 Relocate Existing High Voltage Tower at Wilbur Ave., 200' West of Viera <sup>4</sup>	1	EA	\$ 500,000.00	\$ 500,000.00
Subtotal Electrical Improvements				\$ 4,999,000.00
<b>TOTAL WILBUR AVENUE IMPROVEMENT COST</b>				<b>\$ 20,634,900.00</b>
				<b>(To the nearest hundred)</b>

**Notes:**

- Improvements are included from the eastern limit of the Santa Fe railroad overpass to the western edge of the Southbound Highway 160 on-ramp.
- Includes Haul from Cut to Fill areas and Offsite Disposal as necessary.
- Existing Hydrants will be replaced with new hydrants.
- The existing high voltage tower is within the proposed right of way on the North side of the street. The alignment of the road can not be moved south to avoid this obstacle because there is an existing water tower on the South side of the street.



### ENGINEER'S PRELIMINARY INFRASTRUCTURE COST ESTIMATE

#### NORTHEAST ANTIOCH REORGANIZATION

##### AREA 1

##### VIERA AVENUE (~340 LF)

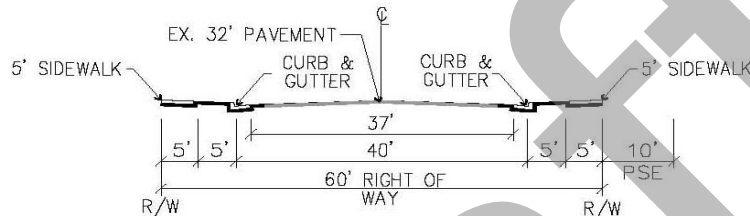
##### FROM WILBUR TO NORTH SIDE OF SANTA FE RAILROAD RIGHT OF WAY

##### ANTIOCH, CALIFORNIA

January 9, 2009

Job No.: 1622-000

Item	Description	Quantity	Unit	Unit Price	Amount
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#### LAND ACQUISITION

1	Right of Way Acquisition	150	SF	\$ 5.00	\$ 750.00
2	Public Service Easement Acquisition (10' PSE one side)	3,400	SF	\$ 2.50	\$ 8,500.00
3	Temporary Construction Easements (10' each side)	6,800	SF	\$ 1.00	\$ 6,800.00
Subtotal Land Acquisition					\$ 16,050.00

#### STREET IMPROVEMENTS

4	Demo Existing Pavement & Section (32' Wide Existing)	10,880	SF	\$ 1.00	\$ 10,880.00
5	Rough Grade Street Section (Includes Offhaul) (2.5' Cut)	1,260	CY	\$ 20.00	\$ 25,200.00
6	Remedial Grading/Unsuitable Materials (25% of Rough Grade Volume)	315	CY	\$ 20.00	\$ 6,300.00
7	Street Fine Grading (Full RW Width)	20,400	SF	\$ 0.40	\$ 8,160.00
8	4" AC Pavement (37' Wide Section Proposed)	12,580	SF	\$ 1.60	\$ 20,128.00
9	20" Aggregate Base (37' Wide Section Proposed)	12,580	SF	\$ 3.00	\$ 37,740.00
10	Curb & Gutter (Includes Cushion)	680	LF	\$ 18.00	\$ 12,240.00
11	5' Detached Sidewalk (Includes Cushion)	3,400	SF	\$ 4.00	\$ 13,600.00
12	Parkway Landscape & Irrigation	3,060	SF	\$ 5.00	\$ 15,300.00
13	Geotextile Fabric	12,580	SF	\$ 0.20	\$ 2,516.00
14	Street Monuments (Assumed)	2	EA	\$ 300.00	\$ 600.00
15	Signing & Striping	340	LF	\$ 10.00	\$ 3,400.00
16	Traffic Control	340	LF	\$ 25.00	\$ 8,500.00
17	Protect Existing Waterline	340	LF	\$ 10.00	\$ 3,400.00

Subtotal Street Improvements \$ 167,964.00

#### STORM DRAIN

18	24" Storm Drain Pipe	340	LF	\$ 72.00	\$ 24,480.00
19	18" Storm Drain Crossings (40' each @ 300')	40	LF	\$ 54.00	\$ 2,160.00
20	Catch Basins (Assumed 2 @ 300')	2	EA	\$ 3,000.00	\$ 6,000.00
21	Manholes (Assumed @ 500')	1	EA	\$ 3,500.00	\$ 3,500.00
22	Water Quality Filters (Assumed @ 1,000')	1	EA	\$ 35,000.00	\$ 35,000.00

Subtotal Storm Drain \$ 71,140.00

Item	Description	Quantity	Unit	Unit Price	Amount
<b><u>SANITARY SEWER</u></b>					
23	8" Sanitary Sewer Pipe (10 - 15' Deep)	370	LF	\$ 75.00	\$ 27,750.00
24	Manholes (Assumed @ 400') (Deep)	1	EA	\$ 5,000.00	\$ 5,000.00
	Subtotal Sanitary Sewer				\$ 32,750.00
<b><u>WATER SUPPLY</u></b>					
25	Fire Hydrant	1	EA	\$ 4,000.00	\$ 4,000.00
	Subtotal Water Supply				\$ 4,000.00
<b><u>RECYCLED WATER SUPPLY</u></b>					
26	Recycled Water Line 8" PVC	340	LF	\$ 60.00	\$ 20,400.00
	Subtotal Recycled Water Supply				\$ 20,400.00
<b><u>ELECTRICAL IMPROVEMENTS</u></b>					
27	Relocate Existing 21 Kv/60 Kv Overhead Pole Line	3	EA	\$ 25,000.00	\$ 75,000.00
28	Streetlights (1 @ 120') (Residential Type)	3	EA	\$ 5,000.00	\$ 15,000.00
	Subtotal Electrical Improvements				\$ 90,000.00
<b>TOTAL VIERA AVENUE IMPROVEMENT COST</b>					<b>\$ 402,300.00</b>
<i>(To the nearest hundred)</i>					





ENGINEER'S PRELIMINARY INFRASTRUCTURE COST ESTIMATE

**NORTHEAST ANTIOCH REORGANIZATION**

**AREA 1**

**MINNAKER AVENUE (~240 LF)**

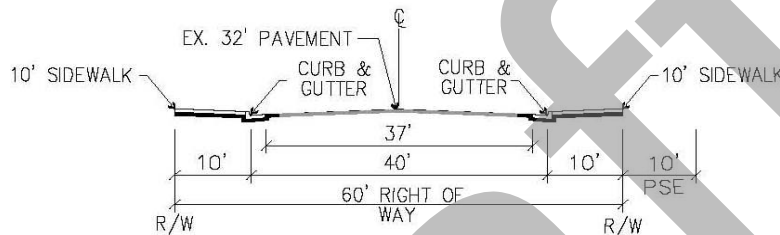
**SOUTH SIDE OF SANTA FE RAILROAD RIGHT OF WAY TO CUL-DE-SAC**

**ANTIOCH, CALIFORNIA**

January 9, 2009

Job No.: 1622-000

Item Description	Quantity	Unit	Unit Price	Amount
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**LAND ACQUISITION**

1	Right of Way Acquisition	1,600	SF	\$	5.00	\$	8,000.00
2	Public Service Easement Acquisition (10' PSE one side)	2,400	SF	\$	2.50	\$	6,000.00
3	Temporary Construction Easements (10' each side)	4,800	SF	\$	1.00	\$	4,800.00
Subtotal Land Acquisition						\$	18,800.00

**STREET IMPROVEMENTS**

4	Demo Existing Pavement & Section (~32' Wide Existing)	15,000	SF	\$	1.00	\$	15,000.00
5	Rough Grade Street Section (Includes Offhaul) (2.5' Cut)	890	CY	\$	20.00	\$	17,800.00
6	Remedial Grading/Unsuitable Materials (25% of Rough Grade Volume)	220	CY	\$	20.00	\$	4,400.00
7	Street Fine Grading (Full RW Width)	18,650	SF	\$	0.40	\$	7,460.00
8	4" AC Pavement (37' Wide Section Proposed)	13,150	SF	\$	1.60	\$	21,040.00
9	20" Aggregate Base (37' Wide Section Proposed)	13,150	SF	\$	3.00	\$	39,450.00
10	Curb & Gutter (Includes Cushion)	530	LF	\$	18.00	\$	9,540.00
11	9.5' Monolithic Sidewalk (Includes Cushion)	5,500	SF	\$	4.00	\$	22,000.00
12	Geotextile Fabric	13,150	SF	\$	0.20	\$	2,630.00
13	Street Monuments (Assumed)	1	EA	\$	300.00	\$	300.00
14	Signing & Striping	240	LF	\$	10.00	\$	2,400.00
15	Traffic Control	240	LF	\$	10.00	\$	2,400.00
16	Driveway Approaches	3	EA	\$	750.00	\$	2,250.00
17	Relocate Existing Railroad Arms	1	EA	\$	50,000.00	\$	50,000.00
18	Repair Existing Railroad Crossings	1	EA	\$	25,000.00	\$	25,000.00

Subtotal Street Improvements \$ 221,670.00

Item	Description	Quantity	Unit	Unit Price	Amount
<b><u>STORM DRAIN</u></b>					
19	24" Storm Drain Pipe	240	LF	\$ 72.00	\$ 17,280.00
20	18" Storm Drain Crossings (40' each @ 300')	40	LF	\$ 54.00	\$ 2,160.00
21	Catch Basins (Assumed 2 @ 300')	2	EA	\$ 3,000.00	\$ 6,000.00
22	Manholes (Assumed @ 500')	1	EA	\$ 3,500.00	\$ 3,500.00
23	Water Quality Filters (Assumed @ 1,000')	1	EA	\$ 35,000.00	\$ 35,000.00
24	Bore & Jack (Under Railroad Right of Way)	1	EA	\$ 35,000.00	\$ 35,000.00
Subtotal Storm Drain					\$ 98,940.00
<b><u>SANITARY SEWER</u></b>					
25	8" Sanitary Sewer Pipe (Includes Trench and Backfill existing to Wilbur Ave.)	420	LF	\$ 70.00	\$ 29,400.00
26	Manholes (Assumed every 400')	2	EA	\$ 3,500.00	\$ 7,000.00
27	Bore & Jack (Under Railroad Right of Way)	1	EA	\$ 35,000.00	\$ 35,000.00
28	Sewer Laterals	3	EA	\$ 750.00	\$ 2,250.00
Subtotal Sanitary Sewer					\$ 73,650.00
<b><u>WATER SUPPLY</u></b>					
29	8" PVC Water Line (Includes Trench and Backfill to Wilbur Ave.)	420	LF	\$ 80.00	\$ 33,600.00
30	Fire Hydrant	1	EA	\$ 4,000.00	\$ 4,000.00
31	Water Laterals	3	EA	\$ 1,000.00	\$ 3,000.00
32	Bore & Jack (Under Railroad Right of Way)	1	EA	\$ 35,000.00	\$ 35,000.00
Subtotal Water Supply					\$ 75,600.00
<b><u>ELECTRICAL IMPROVEMENTS</u></b>					
33	21 Kv Underground Conversion	240	LF	\$ 275.00	\$ 66,000.00
34	Relocate Existing 60 Kv Overhead Pole Line	1	EA	\$ 25,000.00	\$ 25,000.00
35	Streetlights (1 @ 120') (Cobrahead Type)	2	EA	\$ 3,000.00	\$ 6,000.00
Subtotal Electrical Improvements					\$ 97,000.00
<b>TOTAL MINNAKER DRIVE IMPROVEMENT COST</b>					<b>\$ 585,700.00</b>
					<i>(To the nearest hundred)</i>



ENGINEER'S PRELIMINARY INFRASTRUCTURE COST ESTIMATE  
**NORTHEAST ANTIOCH REORGANIZATION**

January 9, 2009  
Job No.: 1622-000

**AREA 1  
SUMMARY  
ANTIOCH, CALIFORNIA**

		Description	Amount
<b><u>SUMMARY - BY IMPROVEMENT</u></b>			
TOTAL LAND ACQUISITION		\$	1,734,900.00
TOTAL STREET IMPROVEMENTS COST		\$	10,518,600.00
TOTAL STORM DRAIN COST		\$	1,890,900.00
TOTAL SANITARY SEWER COST		\$	1,127,500.00
TOTAL WATER SUPPLY COST		\$	504,600.00
TOTAL RECYCLED WATER SUPPLY COST		\$	660,400.00
TOTAL ELECTRICAL IMPROVEMENTS COST		\$	5,186,000.00
<b>TOTAL AREA 1 IMPROVEMENT COST</b>		<b>\$</b>	<b>21,623,000.00</b>
			<i>(To the nearest thousand)</i>
<b><u>SUMMARY - BY STREET</u></b>			
TOTAL WILBUR AVENUE IMPROVEMENT COST		\$	20,634,900.00
TOTAL AREA 1 VIERA AVENUE IMPROVEMENT COST		\$	402,300.00
TOTAL MINNAKER DRIVE IMPROVEMENT COST		\$	585,700.00
<b>TOTAL AREA 1 IMPROVEMENT COST</b>		<b>\$</b>	<b>21,623,000.00</b>
			<i>(To the nearest thousand)</i>



ENGINEER'S PRELIMINARY INFRASTRUCTURE COST ESTIMATE

**NORTHEAST ANTIOCH REORGANIZATION**

**AREA 2A**

**FLEMING LANE & BRIDGEHEAD ROAD (~2,430 LF)**

ANTIOCH, CALIFORNIA

January 9, 2009

Job No.: 1622-000

Item	Description	Quantity	Unit	Unit Price	Amount
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<b>LAND ACQUISITION</b>					
1	Right of Way Acquisition	72,700	SF	\$ 5.00	\$ 363,500.00
2	Public Service Easement Acquisition (10' PSE one side)	24,300	SF	\$ 2.50	\$ 60,750.00
3	Temporary Construction Easements (10' each side)	48,600	SF	\$ 1.00	\$ 48,600.00
4	Acquire & Demolish Ex. Structures (Within proposed Right of Way)	9	EA	\$ 500,000.00	\$ 4,500,000.00
Subtotal Land Acquisition					\$ 4,972,850.00

<b>STREET IMPROVEMENTS</b>					
5	Demo Existing Pavement & Section	48,600	SF	\$ 1.00	\$ 48,600.00
6	Rough Grade Street Section (Includes Offhaul) (2' Cut)	6,480	CY	\$ 20.00	\$ 129,600.00
7	Remedial Grading/Unsuitable Materials (25% of Rough Grade Volume)	1,620	CY	\$ 20.00	\$ 32,400.00
8	Street Fine Grading (Full RW Width)	136,080	SF	\$ 0.40	\$ 54,432.00
9	3" AC Pavement (33' Wide Section Proposed)	80,190	SF	\$ 1.20	\$ 96,228.00
10	13" Aggregate Base (33' Wide Section Proposed)	80,190	SF	\$ 1.95	\$ 156,370.50
11	Curb & Gutter (Includes Cushion)	4,860	LF	\$ 18.00	\$ 87,480.00
12	5' Monolithic Sidewalk (Includes Cushion)	24,300	SF	\$ 4.00	\$ 97,200.00
13	Landscape & Irrigation	24,300	SF	\$ 5.00	\$ 121,500.00
14	Geotextile Fabric	80,190	SF	\$ 0.20	\$ 16,038.00
15	Street Monuments (Assumed)	4	EA	\$ 300.00	\$ 1,200.00
16	Signing & Striping	2,430	LF	\$ 10.00	\$ 24,300.00
17	Traffic Control	2,430	LF	\$ 10.00	\$ 24,300.00
18	Driveway Approaches	5	EA	\$ 750.00	\$ 3,750.00
19	Remove & Replace Existing Fencing (Assumes all Parcels Fenced)	4,860	LF	\$ 15.00	\$ 72,900.00
Subtotal Street Improvements					\$ 966,298.50

Item	Description	Quantity	Unit	Unit Price	Amount
<b><u>STORM DRAIN</u></b>					
20	24" Storm Drain Pipe	3,420	LF	\$ 72.00	\$ 246,240.00
21	18" Storm Drain Crossings (36' each @ 300')	410	LF	\$ 54.00	\$ 22,140.00
22	Catch Basins (Assumed 2 @ 300')	23	EA	\$ 3,000.00	\$ 69,000.00
23	Manholes (Assumed @ 500')	7	EA	\$ 3,500.00	\$ 24,500.00
24	Water Quality Filters (Assumed @ 1,000')	3	EA	\$ 35,000.00	\$ 105,000.00
25	Outfall to San Joaquin River	1	EA	\$ 25,000.00	\$ 25,000.00
26	Environmental Permitting for New Outfall	1	LS	\$ 50,000.00	\$ 50,000.00
Subtotal Storm Drain					\$ 541,880.00
<b><u>STORM DRAIN TRUNK REPLACEMENTS</u></b>					
27	Remove Existing 48" SD Pipe Between Detention Basin & River	4,400	LF	\$ 20.00	\$ 88,000.00
28	Replace Existing 48" SD Pipe Between Detention Basin & River	4,400	LF	\$ 144.00	\$ 633,600.00
29	Manholes (Assumed @ 500')	9	EA	\$ 3,500.00	\$ 31,500.00
30	Replace Existing 48" SD Culverts	2	EA	\$ 10,000.00	\$ 20,000.00
Subtotal Storm Drain					\$ 773,100.00
<b><u>SANITARY SEWER</u></b>					
31	8" Sanitary Sewer Pipe	2,400	LF	\$ 50.00	\$ 120,000.00
32	Manholes (Assumed @ 400')	6	EA	\$ 3,500.00	\$ 21,000.00
33	Connect to Existing Sewer Pipe	1	EA	\$ 1,500.00	\$ 1,500.00
34	Sewer Laterals	5	EA	\$ 750.00	\$ 3,750.00
Subtotal Sanitary Sewer					\$ 146,250.00
<b><u>WATER SUPPLY</u></b>					
35	8" PVC Water Line	1,650	LF	\$ 60.00	\$ 99,000.00
36	Fire Hydrant (Assumed @ 400')	5	EA	\$ 4,000.00	\$ 20,000.00
37	Water Laterals	5	EA	\$ 750.00	\$ 3,750.00
38	Fire Service Laterals	5	EA	\$ 750.00	\$ 3,750.00
39	Irrigation Controller (Assumed @ 2,000')	1	EA	\$ 25,000.00	\$ 25,000.00
Subtotal Water Supply					\$ 151,500.00
<b><u>ELECTRICAL IMPROVEMENTS</u></b>					
40	Relocate Existing 21 Kv/60 Kv Overhead Pole Line	12	EA	\$ 25,000.00	\$ 300,000.00
41	Streetlights (1 @ 120') (Cobrahead Type)	20	EA	\$ 3,000.00	\$ 60,000.00
Subtotal Electrical Improvements					\$ 360,000.00

**TOTAL FLEMING LANE AND BRIDGEHEAD ROAD IMPROVEMENT COST \$ 7,911,900.00**  
*(To the nearest hundred)*

**TOTAL AREA 2A IMPROVEMENT COST \$ 7,912,000.00**  
*(To the nearest thousand)*



ENGINEER'S PRELIMINARY INFRASTRUCTURE COST ESTIMATE  
**NORTHEAST ANTIOCH REORGANIZATION**

January 9, 2009  
Job No.: 1622-000

**AREA 2B**  
**VIERA AVE (~2,300 LF)**  
**FROM NORTH SIDE OF SANTE FE RAILROAD TRACKS TO 18TH STREET INTERSECTION**  
**ANTIOCH, CALIFORNIA**

Item	Description	Quantity	Unit	Unit Price	Amount
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The diagram illustrates the cross-section of the project area. It shows an existing 32-foot wide pavement section in the center, flanked by 5-foot wide sidewalks on both sides. The total right-of-way (R/W) is 60 feet. The diagram also indicates the locations of curbs and gutters, and a 10-foot public service easement (PSE) on the right side. The proposed section width is 37 feet, and the aggregate base width is 40 feet.

<b>LAND ACQUISITION</b>					
1	Right of Way Acquisition	19,000	SF	\$ 5.00	\$ 95,000.00
2	Public Service Easement Acquisition (10' PSE one side)	23,000	SF	\$ 2.50	\$ 57,500.00
3	Temporary Construction Easements (10' each side)	46,000	SF	\$ 1.00	\$ 46,000.00
Subtotal Land Acquisition				\$	198,500.00
<b>STREET IMPROVEMENTS</b>					
4	Demo Existing Pavement & Section (~32' Wide Existing)	73,600	SF	\$ 1.00	\$ 73,600.00
5	Rough Grade Street Section (Includes Offhaul)(2.5' Cut)	8,520	CY	\$ 20.00	\$ 170,400.00
6	Remedial Grading/Unsuitable Materials (25% of Rough Grade Volume)	2,130	CY	\$ 20.00	\$ 42,600.00
7	Street Fine Grading (Full RW Width)	138,000	SF	\$ 0.40	\$ 55,200.00
8	4" AC Pavement (37' Wide Section Proposed)	85,100	SF	\$ 1.60	\$ 136,160.00
9	20" Aggregate Base (37' Wide Section Proposed)	85,100	SF	\$ 3.00	\$ 255,300.00
10	Curb & Gutter (Includes Cushion)	4,600	LF	\$ 18.00	\$ 82,800.00
11	5' Detached Sidewalk (Includes Cushion)	23,000	SF	\$ 4.00	\$ 92,000.00
12	Landscape & Irrigation	20,700	SF	\$ 5.00	\$ 103,500.00
13	Geotextile Fabric	85,100	SF	\$ 0.20	\$ 17,020.00
14	Street Monuments (Assumed @ Street Intersections)	5	EA	\$ 300.00	\$ 1,500.00
15	Signing & Striping	2,300	LF	\$ 10.00	\$ 23,000.00
16	Traffic Control	2,300	LF	\$ 25.00	\$ 57,500.00
17	Driveway Approaches	31	EA	\$ 750.00	\$ 23,250.00
18	Relocate Existing Railroad Arms	1	EA	\$ 50,000.00	\$ 50,000.00
19	Repair Existing Railroad Crossing	1	EA	\$ 25,000.00	\$ 25,000.00
20	Protect Existing Waterline	2,300	LF	\$ 10.00	\$ 23,000.00
Subtotal Street Improvements				\$	1,231,830.00



Item	Description	Quantity	Unit	Unit Price	Amount
<b><u>STORM DRAIN</u></b>					
21	24" Storm Drain Pipe	1,800	LF	\$ 72.00	\$ 129,600.00
22	18" Storm Drain Crossings (40' each @ 300')	240	LF	\$ 54.00	\$ 12,960.00
23	Catch Basins (Assumed 2 @ 300')	12	EA	\$ 3,000.00	\$ 36,000.00
24	Manholes (Assumed @ 500')	4	EA	\$ 3,500.00	\$ 14,000.00
25	Water Quality Filters (Assumed @ 1,000')	3	EA	\$ 35,000.00	\$ 105,000.00
Subtotal Storm Drain					\$ 297,560.00
<b><u>SANITARY SEWER</u></b>					
26	8" Sanitary Sewer Pipe	1,060	LF	\$ 50.00	\$ 53,000.00
27	8" Sanitary Sewer Pipe (10 - 15' Deep)	640	LF	\$ 75.00	\$ 48,000.00
28	8" Sanitary Sewer Pipe (15 - 20' Deep)	510	LF	\$ 120.00	\$ 61,200.00
29	Manholes (Assumed every 400') (Deep)	6	EA	\$ 5,000.00	\$ 30,000.00
30	Sewer Laterals	31	EA	\$ 1,000.00	\$ 31,000.00
31	Bore & Jack (Under Railroad Right of Way)	1	EA	\$ 35,000.00	\$ 35,000.00
Subtotal Sanitary Sewer					\$ 258,200.00
<b><u>WATER SUPPLY</u></b>					
32	Water Laterals (Hot Tap Existing 16" Main)	31	EA	\$ 2,500.00	\$ 77,500.00
33	Fire Hydrant (Assumed @ 400')	6	EA	\$ 4,000.00	\$ 24,000.00
34	Irrigation Controller (Assumed @ 2,000')	2	EA	\$ 25,000.00	\$ 50,000.00
Subtotal Water Supply					\$ 151,500.00
<b><u>RECYCLED WATER SUPPLY</u></b>					
35	Recycled Water Line 8" PVC	2,300	LF	\$ 60.00	\$ 138,000.00
36	Bore & Jack Recycled Water (Under Railroad Right of Way)	1	EA	\$ 35,000.00	\$ 35,000.00
Subtotal Recycled Water Supply					\$ 173,000.00
<b><u>ELECTRICAL IMPROVEMENTS</u></b>					
37	Relocate Existing 21 Kv/60 Kv Overhead Pole Line	15	EA	\$ 25,000.00	\$ 375,000.00
38	Streetlights (1 @ 120') (Residential Type)	19	EA	\$ 5,000.00	\$ 95,000.00
Subtotal Electrical Improvements					\$ 470,000.00
<b>TOTAL VIERA AVENUE IMPROVEMENT COST</b>					<b>\$ 2,780,600.00</b>
					<b>(To the nearest hundred)</b>

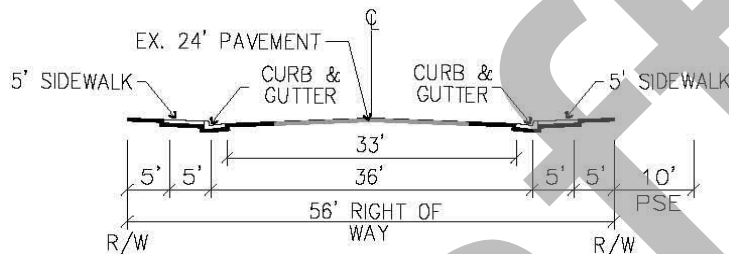


ENGINEER'S PRELIMINARY INFRASTRUCTURE COST ESTIMATE  
**NORTHEAST ANTIOCH REORGANIZATION**

January 9, 2009  
Job No.: 1622-000

**AREA 2B**  
**SANTA FE AVENUE (~600 LF)**  
ANTIOCH, CALIFORNIA

Item	Description	Quantity	Unit	Unit Price	Amount
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**LAND ACQUISITION**

1	Right of Way Acquisition	3,030	SF	\$ 5.00	\$ 15,150.00
2	Public Service Easement Acquisition (10' PSE one side)	6,000	SF	\$ 2.50	\$ 15,000.00
3	Temporary Construction Easements (10' each side)	12,000	SF	\$ 1.00	\$ 12,000.00
4	Easement for Storm Drain Pipe (Assumed 20' Wide)	27,200	SF	\$ 2.50	\$ 68,000.00
Subtotal Land Acquisition					\$ 110,150.00

**STREET IMPROVEMENTS**

5	Demo Existing Pavement & Section (~24' Wide Existing)	14,400	SF	\$ 1.00	\$ 14,400.00
6	Rough Grade Street Section (Includes Offhaul) (2' Cut)	1,600	CY	\$ 20.00	\$ 32,000.00
7	Remedial Grading/Unsuitable Materials (25% of Rough Grade Volume)	400	CY	\$ 20.00	\$ 8,000.00
8	Street Fine Grading (Full RW Width)	33,600	SF	\$ 0.40	\$ 13,440.00
9	3" AC Pavement (33' Wide Section Proposed)	19,800	SF	\$ 1.20	\$ 23,760.00
10	13" Aggregate Base (33' Wide Section Proposed)	19,800	SF	\$ 1.95	\$ 38,610.00
11	Curb & Gutter (Includes Cushion)	1,200	LF	\$ 18.00	\$ 21,600.00
12	4.5' Monolithic Sidewalk (Includes Cushion)	5,400	SF	\$ 4.00	\$ 21,600.00
13	Landscape & Irrigation	6,000	SF	\$ 5.00	\$ 30,000.00
14	Geotextile Fabric	19,800	SF	\$ 0.20	\$ 3,960.00
15	Street Monuments (Assumed)	2	EA	\$ 300.00	\$ 600.00
16	Signing & Striping	600	LF	\$ 10.00	\$ 6,000.00
17	Traffic Control	600	LF	\$ 10.00	\$ 6,000.00
18	Driveway Approaches	12	EA	\$ 750.00	\$ 9,000.00
Subtotal Street Improvements					\$ 228,970.00

Item	Description	Quantity	Unit	Unit Price	Amount
<b><u>STORM DRAIN</u><sup>1-2</sup></b>					
19	36" Storm Drain Pipe	630	LF	\$ 108.00	\$ 68,040.00
20	Catch Basins (Assumed 2 @ 300')	5	EA	\$ 3,000.00	\$ 15,000.00
21	18" Storm Drain Crossings (36' each @ 300')	80	LF	\$ 54.00	\$ 4,320.00
22	Manholes (Assumed @ 500')	2	EA	\$ 3,500.00	\$ 7,000.00
23	Offsite 36" Storm Drain Pipe	1,360	LF	\$ 108.00	\$ 146,880.00
24	Offsite Storm Drain Manhole	3	EA	\$ 3,500.00	\$ 10,500.00
25	Basin Outfall	1	LS	\$ 10,000.00	\$ 10,000.00
26	Water Quality Filters (Assumed @ 1,000')	1	EA	\$ 35,000.00	\$ 35,000.00
Subtotal Storm Drain					\$ 296,740.00
<b><u>SANITARY SEWER</u></b>					
27	8" Sanitary Sewer Pipe	850	LF	\$ 50.00	\$ 42,500.00
28	Manholes (Assumed @ 400')	2	EA	\$ 3,500.00	\$ 7,000.00
29	Sewer Laterals	12	EA	\$ 750.00	\$ 9,000.00
Subtotal Sanitary Sewer					\$ 58,500.00
<b><u>WATER SUPPLY</u></b>					
30	8" PVC Water Line	850	LF	\$ 60.00	\$ 51,000.00
31	Water Lateral	12	EA	\$ 750.00	\$ 9,000.00
32	Fire Hydrant (Assumed @ 400')	2	EA	\$ 4,000.00	\$ 8,000.00
Subtotal Water Supply					\$ 68,000.00
<b><u>ELECTRICAL IMPROVEMENTS</u></b>					
33	Relocate Existing 21 Kv/60 Kv Overhead Pole Line	5	EA	\$ 25,000.00	\$ 125,000.00
34	Streetlights (1 @ 120') (Residential Type)	5	EA	\$ 5,000.00	\$ 25,000.00
Subtotal Electrical Improvements					\$ 150,000.00
<b>TOTAL SANTA FE AVENUE IMPROVEMENT COST</b>					<b>\$ 912,400.00</b>
					<i>(To the nearest hundred)</i>

**Notes:**

1. Includes storm drain line across APN 051-052-530 to existing basin.
2. Detention basin is assumed to have enough capacity for additional watershed.



ENGINEER'S PRELIMINARY INFRASTRUCTURE COST ESTIMATE

**NORTHEAST ANTIOCH REORGANIZATION**

**AREA 2B**

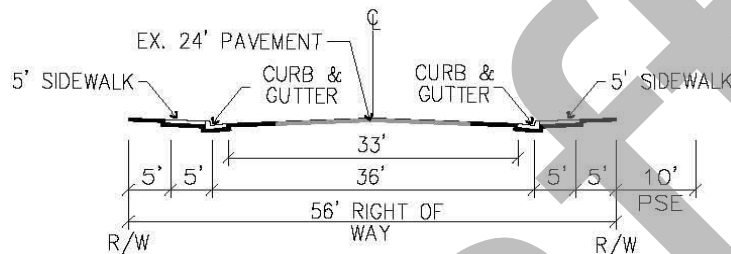
**WALNUT AVENUE (~800 LF)**

ANTIOCH, CALIFORNIA

January 9, 2009

Job No.: 1622-000

Item	Description	Quantity	Unit	Unit Price	Amount
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**LAND ACQUISITION**

1	Right of Way Acquisition	4,500	SF	\$ 5.00	\$ 22,500.00
2	Public Service Easement Acquisition (10' PSE one side)	8,000	SF	\$ 2.50	\$ 20,000.00
3	Temporary Construction Easements (10' each side)	16,000	SF	\$ 1.00	\$ 16,000.00
Subtotal Land Acquisition					\$ 58,500.00

**STREET IMPROVEMENTS**

4	Demo Existing Pavement & Section (~24' Wide Existing)	19,200	SF	\$ 1.00	\$ 19,200.00
5	Rough Grade Street Section (Includes Offhaul) (2' Cut)	2,130	CY	\$ 20.00	\$ 42,600.00
6	Remedial Grading/Unsuitable Materials (25% of Rough Grade Volume)	533	CY	\$ 20.00	\$ 10,650.00
7	Street Fine Grading (Full RW Width)	44,800	SF	\$ 0.40	\$ 17,920.00
8	3" AC Pavement (33' Wide Section Proposed)	26,400	SF	\$ 1.20	\$ 31,680.00
9	13" Aggregate Base (33' Wide Section Proposed)	26,400	SF	\$ 1.95	\$ 51,480.00
10	Curb & Gutter (Includes Cushion)	1,600	LF	\$ 18.00	\$ 28,800.00
11	4.5' Monolithic Sidewalk (Includes Cushion)	7,200	SF	\$ 4.00	\$ 28,800.00
12	Landscape & Irrigation	8,000	SF	\$ 5.00	\$ 40,000.00
13	Geotextile Fabric	26,400	SF	\$ 0.20	\$ 5,280.00
14	Street Monuments (Assumed)	2	EA	\$ 300.00	\$ 600.00
15	Signing & Striping	800	LF	\$ 10.00	\$ 8,000.00
16	Traffic Control	800	LF	\$ 10.00	\$ 8,000.00
17	Driveway Approaches	18	EA	\$ 750.00	\$ 13,500.00
Subtotal Street Improvements					\$ 306,510.00

Item	Description	Quantity	Unit	Unit Price	Amount
<b><u>STORM DRAIN</u></b>					
18	24" Storm Drain Pipe ( <i>Assumed</i> )	800	LF	\$ 72.00	\$ 57,600.00
19	18" Storm Drain Crossings ( <i>36' each @ 300'</i> )	100	LF	\$ 54.00	\$ 5,400.00
20	Catch Basins ( <i>Assumed 2 @ 300'</i> )	6	EA	\$ 3,000.00	\$ 18,000.00
21	Manholes ( <i>Assumed @ 500'</i> )	2	EA	\$ 3,500.00	\$ 7,000.00
22	Water Quality Filters ( <i>Assumed @ 1,000'</i> )	1	EA	\$ 35,000.00	\$ 35,000.00
Subtotal Storm Drain					\$ 123,000.00
<b><u>SANITARY SEWER</u></b>					
23	8" Sanitary Sewer Pipe	800	LF	\$ 50.00	\$ 40,000.00
24	Manholes ( <i>Assumed @ 400'</i> )	2	EA	\$ 3,500.00	\$ 7,000.00
25	Sewer Laterals	18	EA	\$ 750.00	\$ 13,500.00
Subtotal Sanitary Sewer					\$ 60,500.00
<b><u>WATER SUPPLY</u></b>					
26	8" PVC Water Line	800	LF	\$ 60.00	\$ 48,000.00
27	Water Lateral	18	EA	\$ 750.00	\$ 13,500.00
28	Fire Hydrant ( <i>Assumed @ 400'</i> )	2	EA	\$ 4,000.00	\$ 8,000.00
Subtotal Water Supply					\$ 69,500.00
<b><u>ELECTRICAL IMPROVEMENTS</u></b>					
29	Relocate Existing 21 Kv/60 Kv Overhead Pole Line	6	EA	\$ 25,000.00	\$ 150,000.00
30	Streetlights ( <i>1 @ 120'</i> ) ( <i>Residential Type</i> )	7	EA	\$ 5,000.00	\$ 35,000.00
Subtotal Electrical Improvements					\$ 185,000.00
<b>TOTAL WALNUT AVENUE IMPROVEMENT COST</b>					<b>\$ 803,000.00</b>
					<i>(To the nearest hundred)</i>



ENGINEER'S PRELIMINARY INFRASTRUCTURE COST ESTIMATE  
**NORTHEAST ANTIOCH REORGANIZATION**

January 9, 2009  
Job No.: 1622-000

**AREA 2B**  
**BOWN LANE (~600 LF)**  
**ANTIOCH, CALIFORNIA**

Item	Description	Quantity	Unit	Unit Price	Amount
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<b>LAND ACQUISITION</b>					
1	Right of Way Acquisition	3,310	SF	\$ 5.00	\$ 16,550.00
2	Public Service Easement Acquisition (10' PSE one side)	6,000	SF	\$ 2.50	\$ 15,000.00
3	Temporary Construction Easements (10' each side)	12,000	SF	\$ 1.00	\$ 12,000.00
4	Acquire & Demolish Existing Structure (Within proposed Right of Way)	2	EA	\$ 500,000.00	\$ 1,000,000.00
Subtotal Land Acquisition					\$ 1,043,550.00
<b>STREET IMPROVEMENTS</b>					
5	Demo Existing Pavement & Section (~24' Wide Existing)	14,400	SF	\$ 1.00	\$ 14,400.00
6	Rough Grade Street Section (Includes Offhaul) (2' Cut)	1,600	CY	\$ 20.00	\$ 32,000.00
7	Remedial Grading/Unsuitable Materials (25% of Rough Grade Volume)	400	CY	\$ 20.00	\$ 8,000.00
8	Street Fine Grading (Full RW Width)	33,600	SF	\$ 0.40	\$ 13,440.00
9	3" AC Pavement (33' Wide Section Proposed)	19,800	SF	\$ 1.20	\$ 23,760.00
10	13" Aggregate Base (33' Wide Section Proposed)	19,800	SF	\$ 1.95	\$ 38,610.00
11	Curb & Gutter (Includes Cushion)	1,200	LF	\$ 18.00	\$ 21,600.00
12	4.5' Monolithic Sidewalk (Includes Cushion)	5,400	SF	\$ 4.00	\$ 21,600.00
13	Landscape & Irrigation	6,000	SF	\$ 5.00	\$ 30,000.00
14	Geotextile Fabric	19,800	SF	\$ 0.20	\$ 3,960.00
15	Street Monuments (Assumed)	2	EA	\$ 300.00	\$ 600.00
16	Signing & Striping	600	LF	\$ 10.00	\$ 6,000.00
17	Traffic Control	600	LF	\$ 10.00	\$ 6,000.00
18	Driveway Approaches	2	EA	\$ 750.00	\$ 1,500.00
Subtotal Street Improvements					\$ 221,470.00



Item	Description	Quantity	Unit	Unit Price	Amount
<b><u>STORM DRAIN</u></b>					
19	24" Storm Drain Pipe (Assumed)	575	LF	\$ 72.00	\$ 41,400.00
20	18" Storm Drain Crossings (36' each @ 300')	70	LF	\$ 54.00	\$ 3,780.00
21	Catch Basins (Assumed 2 @ 300')	4	EA	\$ 3,000.00	\$ 12,000.00
22	Manholes (Assumed @ 500')	2	EA	\$ 3,500.00	\$ 7,000.00
23	Water Quality Filters (Assumed @ 1,000')	1	EA	\$ 35,000.00	\$ 35,000.00
Subtotal Storm Drain					\$ 99,180.00
<b><u>SANITARY SEWER</u></b>					
24	8" Sanitary Sewer Pipe	300	LF	\$ 50.00	\$ 15,000.00
25	Manholes (Assumed @ 400')	1	EA	\$ 3,500.00	\$ 3,500.00
26	Sewer Laterals	2	EA	\$ 750.00	\$ 1,500.00
Subtotal Sanitary Sewer					\$ 20,000.00
<b><u>WATER SUPPLY</u></b>					
27	8" PVC Water Line	600	LF	\$ 60.00	\$ 36,000.00
28	Water Lateral	2	EA	\$ 750.00	\$ 1,500.00
29	Fire Hydrant (Assumed @ 400')	2	EA	\$ 4,000.00	\$ 8,000.00
Subtotal Water Supply					\$ 45,500.00
<b><u>ELECTRICAL IMPROVEMENTS</u></b>					
30	Relocate Existing 21 Kv/60 Kv Overhead Pole Line	3	EA	\$ 25,000.00	\$ 75,000.00
31	Streetlights (1 @ 120') (Residential Type)	5	EA	\$ 5,000.00	\$ 25,000.00
Subtotal Electrical Improvements					\$ 100,000.00
<b>TOTAL BOWN LANE IMPROVEMENT COST</b>					<b>\$ 1,529,700.00</b>
					<i>(To the nearest hundred)</i>



ENGINEER'S PRELIMINARY INFRASTRUCTURE COST ESTIMATE  
**NORTHEAST ANTIOCH REORGANIZATION**

January 9, 2009  
Job No.: 1622-000

**AREA 2B**  
**VINE LANE (~890 LF) (DIRT ROAD)**  
ANTIOCH, CALIFORNIA

Item	Description	Quantity	Unit	Unit Price	Amount
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The diagram illustrates the cross-section of a street. From left to right, it shows a 5' sidewalk, a curb & gutter, a 33' wide street section, another curb & gutter, and a final 5' sidewalk. The total width of the street section is 36'. The right of way (R/W) is 56' wide. A 10' Public Service Easement (PSE) is shown on the right side of the street. The centerline (C) is marked in the middle of the street.

<b>LAND ACQUISITION</b>					
1	Right of Way Acquisition	13,800	SF	\$ 5.00	\$ 69,000.00
2	Public Service Easement Acquisition (10' PSE one side)	8,900	SF	\$ 2.50	\$ 22,250.00
3	Temporary Construction Easements (10' each side)	17,800	SF	\$ 1.00	\$ 17,800.00
4	Easement for Storm Drain Pipe (Assumed 20' Wide)	27,000	SF	\$ 2.50	\$ 67,500.00
Subtotal Land Acquisition				\$	176,550.00
<b>STREET IMPROVEMENTS</b>					
5	Rough Grade Street Section (Includes Offhaul) (2' Cut)	2,370	CY	\$ 20.00	\$ 47,400.00
6	Remedial Grading/Unsuitable Materials (25% of Rough Grade Volume)	593	CY	\$ 20.00	\$ 11,850.00
7	Street Fine Grading	49,840	SF	\$ 0.40	\$ 19,936.00
8	3" AC Pavement (33' Wide Section Proposed)	29,370	SF	\$ 1.20	\$ 35,244.00
9	13" Aggregate Base (33' Wide Section Proposed)	29,370	SF	\$ 1.95	\$ 57,271.50
10	Curb & Gutter (Includes Cushion)	1,780	LF	\$ 18.00	\$ 32,040.00
11	4.5' Monolithic Sidewalk (Includes Cushion)	8,010	LF	\$ 4.00	\$ 32,040.00
12	Landscape & Irrigation	8,900	SF	\$ 5.00	\$ 44,500.00
13	Geotextile Fabric	29,370	SF	\$ 0.20	\$ 5,874.00
14	Street Monuments (Assumed)	2	EA	\$ 300.00	\$ 600.00
15	Signing & Striping	890	LF	\$ 10.00	\$ 8,900.00
16	Traffic Control	890	LF	\$ 10.00	\$ 8,900.00
17	Driveway Approaches	2	EA	\$ 750.00	\$ 1,500.00
Subtotal Street Improvements				\$	306,055.50

Item	Description	Quantity	Unit	Unit Price	Amount
<b><u>STORM DRAIN</u></b>					
18	24" Storm Drain Pipe (Assumed)	890	LF	\$ 72.00	\$ 64,080.00
19	18" Storm Drain Crossings (36' each @ 300')	110	LF	\$ 54.00	\$ 5,940.00
20	Catch Basins (Assumed 2 @ 300')	6	EA	\$ 3,000.00	\$ 18,000.00
21	Manholes (Assumed @ 500')	2	EA	\$ 3,500.00	\$ 7,000.00
22	Offsite 36" Storm Drain Pipe	1,350	LF	\$ 108.00	\$ 145,800.00
23	Offsite Storm Drain Manhole	3	EA	\$ 3,500.00	\$ 10,500.00
24	Water Quality Filters (Assumed @ 1,000')	1	EA	\$ 35,000.00	\$ 35,000.00
Subtotal Storm Drain					\$ 286,320.00
<b><u>SANITARY SEWER</u></b>					
25	8" Sanitary Sewer Pipe	890	LF	\$ 50.00	\$ 44,500.00
26	Manholes (Assumed @ 400')	2	EA	\$ 3,500.00	\$ 7,000.00
27	Sewer Laterals	22	EA	\$ 750.00	\$ 16,500.00
Subtotal Sanitary Sewer					\$ 68,000.00
<b><u>WATER SUPPLY</u></b>					
28	8" PVC Water Line	890	LF	\$ 60.00	\$ 53,400.00
29	Water Lateral	22	EA	\$ 750.00	\$ 16,500.00
30	Fire Hydrant (Assumed @ 400')	2	EA	\$ 4,000.00	\$ 8,000.00
Subtotal Water Supply					\$ 77,900.00
<b><u>ELECTRICAL IMPROVEMENTS</u></b>					
31	Relocate Existing 21 Kv/60 Kv Overhead Pole Line	6	EA	\$ 25,000.00	\$ 150,000.00
32	Streetlights (1 @ 120') (Residential Type)	7	EA	\$ 5,000.00	\$ 35,000.00
Subtotal Electrical Improvements					\$ 185,000.00
<b>TOTAL VINE LANE IMPROVEMENT COST</b>					<b>\$ 1,099,800.00</b>
					<i>(To the nearest hundred)</i>



ENGINEER'S PRELIMINARY INFRASTRUCTURE COST ESTIMATE

**NORTHEAST ANTIOCH REORGANIZATION**

**AREA 2B**

**STEWART LANE (~350 LF) (DIRT ROAD)**

ANTIOCH, CALIFORNIA

January 9, 2009

Job No.: 1622-000

Item	Description	Quantity	Unit	Unit Price	Amount
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The diagram illustrates the cross-section of Stewart Lane. It shows a central 33' wide section flanked by 5' sidewalks on both sides. A 36' wide section is indicated below the 33' section. A 56' right of way is shown, including the sidewalks and the central section. A 10' PSE (Public Service Easement) is shown on one side. The diagram also labels 'CURB & GUTTER' and 'R/W' (Right of Way).

<b>LAND ACQUISITION</b>					
1	Right of Way Acquisition	5,900	SF	\$ 5.00	\$ 29,500.00
2	Public Service Easement Acquisition (10' PSE one side)	3,500	SF	\$ 2.50	\$ 8,750.00
3	Temporary Construction Easements (10' each side)	7,000	SF	\$ 1.00	\$ 7,000.00
Subtotal Land Acquisition				\$	45,250.00
<b>STREET IMPROVEMENTS</b>					
4	Rough Grade Street Section (Includes Offhaul) (2' Cut)	930	CY	\$ 20.00	\$ 18,600.00
5	Remedial Grading/Unsuitable Materials (25% of Rough Grade Volume)	233	CY	\$ 20.00	\$ 4,650.00
6	Street Fine Grading	19,600	SF	\$ 0.40	\$ 7,840.00
7	3" AC Pavement (33' Wide Section Proposed)	11,550	SF	\$ 1.20	\$ 13,860.00
8	13" Aggregate Base (33' Wide Section Proposed)	11,550	SF	\$ 1.95	\$ 22,522.50
9	Curb & Gutter (Includes Cushion)	700	LF	\$ 18.00	\$ 12,600.00
10	4.5' Monolithic Sidewalk (Includes Cushion)	3,150	SF	\$ 4.00	\$ 12,600.00
11	Landscape & Irrigation	3,500	SF	\$ 5.00	\$ 17,500.00
12	Geotextile Fabric	11,550	SF	\$ 0.20	\$ 2,310.00
13	Street Monuments (Assumed)	1	EA	\$ 300.00	\$ 300.00
14	Signing & Striping	350	LF	\$ 10.00	\$ 3,500.00
15	Traffic Control	350	LF	\$ 10.00	\$ 3,500.00
16	Driveway Approaches	4	EA	\$ 750.00	\$ 3,000.00
Subtotal Street Improvements				\$	122,782.50

Item	Description	Quantity	Unit	Unit Price	Amount
<b><u>STORM DRAIN</u></b>					
17	24" Storm Drain Pipe (Assumed)	350	LF	\$ 64.00	\$ 22,400.00
18	18" Storm Drain Crossings (36' each @ 300')	40	LF	\$ 54.00	\$ 2,160.00
19	Catch Basins (Assumed 2 @ 300')	3	EA	\$ 3,000.00	\$ 9,000.00
20	Manholes (Assumed @ 500')	1	EA	\$ 3,500.00	\$ 3,500.00
21	Water Quality Filters (Assumed @ 1,000')	1	EA	\$ 35,000.00	\$ 35,000.00
Subtotal Storm Drain					\$ 72,060.00
<b><u>SANITARY SEWER</u></b>					
22	8" Sanitary Sewer Pipe	350	LF	\$ 50.00	\$ 17,500.00
23	Manholes (Assumed @ 400')	1	EA	\$ 3,500.00	\$ 3,500.00
24	Sewer Laterals	4	EA	\$ 750.00	\$ 3,000.00
Subtotal Sanitary Sewer					\$ 24,000.00
<b><u>WATER SUPPLY</u></b>					
25	8" PVC Water Line	350	LF	\$ 60.00	\$ 21,000.00
26	Water Lateral	4	EA	\$ 750.00	\$ 3,000.00
27	Fire Hydrant (Assumed @ 400')	1	EA	\$ 4,000.00	\$ 4,000.00
Subtotal Water Supply					\$ 28,000.00
<b><u>ELECTRICAL IMPROVEMENTS</u></b>					
28	Relocate Existing 21 Kv/60 Kv Overhead Pole Line	2	EA	\$ 25,000.00	\$ 50,000.00
29	Streetlights (1 @ 120') (Residential Type)	3	EA	\$ 5,000.00	\$ 15,000.00
Subtotal Electrical Improvements					\$ 65,000.00
<b>TOTAL STEWART LANE IMPROVEMENT COST</b>					<b>\$ 357,100.00</b>
					<i>(To the nearest hundred)</i>



ENGINEER'S PRELIMINARY INFRASTRUCTURE COST ESTIMATE

**NORTHEAST ANTIOCH REORGANIZATION**

**AREA 2B**

**ST. CLAIRE DRIVE (~1,200 LF) (DIRT ROAD)**

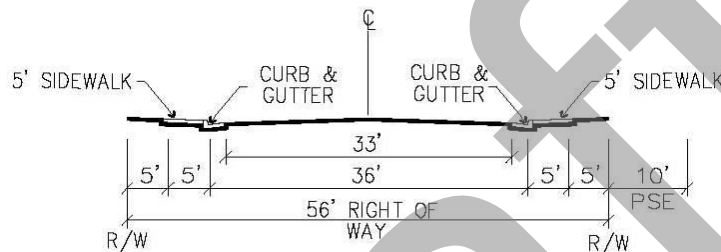
**EXTENSION TO LIPTON STREET**

**ANTIOCH, CALIFORNIA**

January 9, 2009

Job No.: 1622-000

Item	Description	Quantity	Unit	Unit Price	Amount
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**LAND ACQUISITION**

1	Right of Way Acquisition	23,300	SF	\$ 5.00	\$ 116,500.00
2	Public Service Easement Acquisition (10' PSE one side)	8,000	SF	\$ 2.50	\$ 20,000.00
3	Temporary Construction Easements (10' each side)	16,000	SF	\$ 1.00	\$ 16,000.00
4	Acquire & Demolish Existing Structure (Within proposed Right of Way)	1	EA	\$ 500,000.00	\$ 500,000.00
Subtotal Land Acquisition					\$ 652,500.00

**STREET IMPROVEMENTS**

5	Rough Grade Street Section (Includes Offhaul) (2' Cut)	3,200	CY	\$ 20.00	\$ 64,000.00
6	Remedial Grading/Unsuitable Materials (25% of Rough Grade Volume)	800	CY	\$ 20.00	\$ 16,000.00
7	Street Fine Grading	67,200	SF	\$ 0.40	\$ 26,880.00
8	3" AC Pavement (33' Wide Section Proposed)	39,600	SF	\$ 1.20	\$ 47,520.00
9	13" Aggregate Base (33' Wide Section Proposed)	39,600	SF	\$ 1.95	\$ 77,220.00
10	Curb & Gutter (Includes Cushion)	2,400	LF	\$ 18.00	\$ 43,200.00
11	4.5' Monolithic Sidewalk (Includes Cushion)	10,800	SF	\$ 4.00	\$ 43,200.00
12	Landscape & Irrigation	12,000	SF	\$ 5.00	\$ 60,000.00
13	Geotextile Fabric	39,600	SF	\$ 0.20	\$ 7,920.00
14	Street Monuments (Assumed)	3	EA	\$ 300.00	\$ 900.00
15	Signing & Striping	1,200	LF	\$ 10.00	\$ 12,000.00
16	Traffic Control	1,200	LF	\$ 10.00	\$ 12,000.00
17	Driveway Approaches	10	EA	\$ 750.00	\$ 7,500.00
Subtotal Street Improvements					\$ 418,340.00



Item	Description	Quantity	Unit	Unit Price	Amount
<b><u>STORM DRAIN<sup>1</sup></u></b>					
18	24" Storm Drain Pipe (Assumed)	1,100	LF	\$ 72.00	\$ 79,200.00
19	24" Storm Drain Pipe (Trench and Repair 18th Street)	250	LF	\$ 144.00	\$ 36,000.00
20	18" Storm Drain Crossings (36' each @ 300')	130	LF	\$ 54.00	\$ 7,020.00
21	Catch Basins (Assumed 2 @ 300')	8	EA	\$ 3,000.00	\$ 24,000.00
22	Manholes (Assumed @ 500')	3	EA	\$ 3,500.00	\$ 10,500.00
23	Water Quality Filters (Assumed @ 1,000')	1	EA	\$ 35,000.00	\$ 35,000.00
Subtotal Storm Drain					\$ 191,720.00
<b><u>SANITARY SEWER<sup>2</sup></u></b>					
24	8" Sanitary Sewer Pipe	890	LF	\$ 50.00	\$ 44,500.00
25	8" Sanitary Sewer Pipe (Trench and Repair 18th Street)	290	LF	\$ 100.00	\$ 29,000.00
26	Manholes (Assumed @ 400')	3	EA	\$ 3,500.00	\$ 10,500.00
27	Sewer Laterals	10	EA	\$ 750.00	\$ 7,500.00
Subtotal Sanitary Sewer					\$ 91,500.00
<b><u>WATER SUPPLY</u></b>					
28	8" PVC Water Line	1,200	LF	\$ 60.00	\$ 72,000.00
29	Water Lateral	10	EA	\$ 750.00	\$ 7,500.00
30	Fire Hydrant (Assumed @ 400')	3	EA	\$ 4,000.00	\$ 12,000.00
Subtotal Water Supply					\$ 91,500.00
<b><u>ELECTRICAL IMPROVEMENTS</u></b>					
31	Relocate Existing 21 Kv/60 Kv Overhead Pole Line	6	EA	\$ 25,000.00	\$ 150,000.00
32	Streetlights (1 @ 120') (Residential Type)	10	EA	\$ 5,000.00	\$ 50,000.00
Subtotal Electrical Improvements					\$ 200,000.00
<b>TOTAL ST. CLAIRE DRIVE IMPROVEMENT COST</b>					<b>\$ 1,645,600.00</b>
					<i>(To the nearest hundred)</i>

Notes:

1. Connects to storm drain on 18th Street.
2. Connects to sanitary sewer on 18th Street.



### ENGINEER'S PRELIMINARY INFRASTRUCTURE COST ESTIMATE

#### NORTHEAST ANTIOCH REORGANIZATION

#### AREA 2B

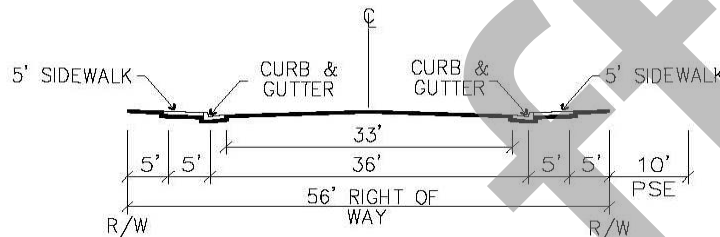
#### TREMBATH LANE (~980 LF) (DIRT ROAD)

ANTIOCH, CALIFORNIA

January 9, 2009

Job No.: 1622-000

Item	Description	Quantity	Unit	Unit Price	Amount
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#### LAND ACQUISITION

1	Right of Way Acquisition	14,150	SF	\$ 5.00	\$ 70,750.00
2	Public Service Easement Acquisition (10' PSE one side)	9,800	SF	\$ 2.50	\$ 24,500.00
3	Temporary Construction Easements (10' each side)	19,110	SF	\$ 1.00	\$ 19,110.00
4	Acquire & Demolish Existing Structure (Within proposed Right of Way)	1	EA	\$ 500,000.00	\$ 500,000.00
Subtotal Land Acquisition					\$ 614,360.00

#### STREET IMPROVEMENTS

5	Rough Grade Street Section (Includes Offhaul) (2' Cut)	2,610	CY	\$ 20.00	\$ 52,200.00
6	Remedial Grading/Unsuitable Materials (25% of Rough Grade Volume)	653	CY	\$ 20.00	\$ 13,050.00
7	Street Fine Grading	54,880	SF	\$ 0.40	\$ 21,952.00
8	3" AC Pavement (33' Wide Section Proposed)	32,340	SF	\$ 1.20	\$ 38,808.00
9	13" Aggregate Base (33' Wide Section Proposed)	32,340	SF	\$ 1.95	\$ 63,063.00
10	Curb & Gutter (Includes Cushion)	1,960	LF	\$ 18.00	\$ 35,280.00
11	4.5' Monolithic Sidewalk (Includes Cushion)	8,820	SF	\$ 4.00	\$ 35,280.00
12	Landscape & Irrigation	9,800	SF	\$ 5.00	\$ 49,000.00
13	Geotextile Fabric	32,340	SF	\$ 0.20	\$ 6,468.00
14	Street Monuments (Assumed)	2	EA	\$ 300.00	\$ 600.00
15	Signing & Striping	980	LF	\$ 10.00	\$ 9,800.00
16	Traffic Control	980	LF	\$ 10.00	\$ 9,800.00
17	Driveway Approaches	8	EA	\$ 750.00	\$ 6,000.00
Subtotal Street Improvements					\$ 341,301.00

#### STORM DRAIN

18	18" Storm Drain Crossings (36' each @ 300') (Main existing)	120	LF	\$ 54.00	\$ 6,480.00
19	Catch Basins (Assumed 2 @ 300')	7	EA	\$ 3,000.00	\$ 21,000.00
20	Manholes (Assumed @ 500')	2	EA	\$ 3,500.00	\$ 7,000.00
21	Water Quality Filters (Assumed @ 1,000')	1	EA	\$ 35,000.00	\$ 35,000.00
Subtotal Storm Drain					\$ 69,480.00

Item	Description	Quantity	Unit	Unit Price	Amount
<b><u>SANITARY SEWER<sup>1</sup></u></b>					
22	8" Sanitary Sewer Pipe	750	LF	\$ 50.00	\$ 37,500.00
23	8" Sanitary Sewer Pipe ( <i>Trench and Repair 18th Street</i> )	50	LF	\$ 100.00	\$ 5,000.00
24	Manholes ( <i>Assumed @ 400'</i> )	2	EA	\$ 3,500.00	\$ 7,000.00
25	Sewer Laterals	8	EA	\$ 750.00	\$ 6,000.00
Subtotal Sanitary Sewer					\$ 55,500.00
<b><u>WATER SUPPLY</u></b>					
26	8" PVC Water Line	980	LF	\$ 60.00	\$ 58,800.00
27	Water Lateral	8	EA	\$ 750.00	\$ 6,000.00
28	Fire Hydrant ( <i>Assumed @ 400'</i> )	2	EA	\$ 4,000.00	\$ 8,000.00
Subtotal Water Supply					\$ 72,800.00
<b><u>ELECTRICAL IMPROVEMENTS</u></b>					
29	Relocate Existing 21 Kv/60 Kv Overhead Pole Line	6	EA	\$ 25,000.00	\$ 150,000.00
30	Streetlights ( <i>1 @ 120'</i> ) ( <i>Residential Type</i> )	8	EA	\$ 5,000.00	\$ 40,000.00
Subtotal Electrical Improvements					\$ 190,000.00
<b>TOTAL TREMBATH LANE IMPROVEMENT COST</b>					<b>\$ 1,343,400.00</b>
					<i>(To the nearest hundred)</i>

**Notes:**

1. Connects to sewer on Trembath Street across 18th Street.



ENGINEER'S PRELIMINARY INFRASTRUCTURE COST ESTIMATE

**NORTHEAST ANTIOCH REORGANIZATION**

**AREA 2B**

**MIKE YORBA WAY (~250 LF) (DIRT ROAD)**

ANTIOCH, CALIFORNIA

January 9, 2009

Job No.: 1622-000

Item	Description	Quantity	Unit	Unit Price	Amount
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Diagram showing the cross-section of Mike Yorba Way. The total width is 56' RIGHT OF WAY. The central section is 33' wide, flanked by 5' sidewalks on both sides. The curb & gutter sections are 5' wide. The Public Service Easement (PSE) is 10' wide on the right side. The total width is 56'.

<b>LAND ACQUISITION</b>					
1	Right of Way Acquisition	12,800	SF	\$ 5.00	\$ 64,000.00
2	Public Service Easement Acquisition (10' PSE one side)	2,500	SF	\$ 2.50	\$ 6,250.00
3	Temporary Construction Easements (10' each side)	5,000	SF	\$ 1.00	\$ 5,000.00
4	Acquire & Demolish Existing Structure (Within proposed Right of Way)	1	EA	\$ 500,000.00	\$ 500,000.00
Subtotal Land Acquisition					\$ 575,250.00

<b>STREET IMPROVEMENTS</b>					
5	Rough Grade Street Section (Includes Offhaul) (2' Cut)	670	CY	\$ 20.00	\$ 13,400.00
6	Remedial Grading/Unsuitable Materials (25% of Rough Grade Volume)	168	CY	\$ 20.00	\$ 3,350.00
7	Street Fine Grading	14,000	SF	\$ 0.40	\$ 5,600.00
8	3" AC Pavement (33' Wide Section Proposed)	8,250	SF	\$ 1.20	\$ 9,900.00
9	13" Aggregate Base (33' Wide Section Proposed)	8,250	SF	\$ 1.95	\$ 16,087.50
10	Curb & Gutter (Includes Cushion)	500	LF	\$ 18.00	\$ 9,000.00
11	4.5' Monolithic Sidewalk (Includes Cushion)	2,250	SF	\$ 4.00	\$ 9,000.00
12	Parkway Landscape & Irrigation	2,500	SF	\$ 5.00	\$ 12,500.00
13	Geotextile Fabric	8,250	SF	\$ 0.20	\$ 1,650.00
14	Street Monuments (Assumed)	1	EA	\$ 300.00	\$ 300.00
15	Signing & Striping	500	LF	\$ 10.00	\$ 5,000.00
16	Traffic Control	500	LF	\$ 10.00	\$ 5,000.00
17	Driveway Approaches	4	EA	\$ 750.00	\$ 3,000.00
Subtotal Street Improvements					\$ 93,787.50

Item	Description	Quantity	Unit	Unit Price	Amount
<b><u>STORM DRAIN</u></b>					
18	18" Storm Drain Crossings	100	LF	\$ 64.00	\$ 6,400.00
19	Catch Basins	2	EA	\$ 3,000.00	\$ 6,000.00
20	Manholes (Assumed @ 500')	1	EA	\$ 3,500.00	\$ 3,500.00
21	Water Quality Filters (Assumed @ 1,000')	1	EA	\$ 35,000.00	\$ 35,000.00
Subtotal Storm Drain					\$ 50,900.00
<b><u>SANITARY SEWER</u></b>					
22	8" Sanitary Sewer Pipe	250	LF	\$ 50.00	\$ 12,500.00
23	Manholes (Assumed @ 400')	1	EA	\$ 3,500.00	\$ 3,500.00
24	Sewer Laterals	4	EA	\$ 750.00	\$ 3,000.00
Subtotal Sanitary Sewer					\$ 19,000.00
<b><u>WATER SUPPLY</u></b>					
25	8" PVC Water Line	250	LF	\$ 60.00	\$ 15,000.00
26	Water Lateral	4	EA	\$ 750.00	\$ 3,000.00
27	Fire Hydrant (Assumed @ 400')	1	EA	\$ 4,000.00	\$ 4,000.00
Subtotal Water Supply					\$ 22,000.00
<b><u>ELECTRICAL IMPROVEMENTS</u></b>					
28	Relocate Existing 21 Kv/60 Kv Overhead Pole Line	2	EA	\$ 25,000.00	\$ 50,000.00
29	Streetlights (1 @ 120') (Residential Type)	2	EA	\$ 5,000.00	\$ 10,000.00
Subtotal Electrical Improvements					\$ 60,000.00
<b>TOTAL MIKE YORBA WAY IMPROVEMENT COST</b>					<b>\$ 820,900.00</b>
<i>(To the nearest hundred)</i>					



ENGINEER'S PRELIMINARY INFRASTRUCTURE COST ESTIMATE  
**NORTHEAST ANTIOCH REORGANIZATION**  
**AREA 2B**  
**SUMMARY**  
ANTIOCH, CALIFORNIA

January 9, 2009  
Job No.: 1622-000

Description	Amount
<b><u>SUMMARY - BY IMPROVEMENT</u></b>	
TOTAL LAND ACQUISITION COST	\$ 3,474,600.00
TOTAL STREET IMPROVEMENTS COST	\$ 3,271,000.00
TOTAL STORM DRAIN COST	\$ 1,487,000.00
TOTAL SANITARY SEWER COST	\$ 655,200.00
TOTAL WATER SUPPLY COST	\$ 626,700.00
TOTAL RECYCLED WATER SUPPLY COST	\$ 173,000.00
TOTAL ELECTRICAL IMPROVEMENTS COST	\$ 1,605,000.00
<b>TOTAL AREA 2B IMPROVEMENT COST</b>	<b>\$ 11,293,000.00</b>
<b><u>SUMMARY - BY STREET</u></b>	
TOTAL VIERA AVENUE IMPROVEMENT COST	\$ 2,780,600.00
TOTAL SANTA FE AVENUE IMPROVEMENT COST	\$ 912,400.00
TOTAL WALNUT AVENUE IMPROVEMENT COST	\$ 803,000.00
TOTAL BOWN LANE IMPROVEMENT COST	\$ 1,529,700.00
TOTAL VINE LANE IMPROVEMENT COST	\$ 1,099,800.00
TOTAL STEWART LANE IMPROVEMENT COST	\$ 357,100.00
TOTAL ST. CLAIRE DRIVE IMPROVEMENT COST	\$ 1,645,600.00
TOTAL TREMBATH LANE IMPROVEMENT COST	\$ 1,343,400.00
TOTAL MIKE YORBA WAY IMPROVEMENT COST	\$ 820,900.00
<b>TOTAL AREA 2B IMPROVEMENT COST</b>	<b>\$ 11,293,000.00</b>



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APPLYING KNOWLEDGE, CREATING RESULTS, ADDING VALUE



# **Appendix D**

City of Antioch Urban Water Management Plan Update:  
Final Report





JANUARY 2006

## FINAL REPORT



# Urban Water Management Plan Update

BROWN AND  
CALDWELL



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# City of Antioch Urban Water Management Plan Update FINAL REPORT

January 2006



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# SECTION 1

## INTRODUCTION

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This Urban Water Management Plan (Plan) addresses the City of Antioch's (City's) water system, which currently serves about 101,049 people within a 28.8 square mile area located in eastern Contra Costa County. Annually the City provides approximately 7,100 million gallons of water to 28,860 connections. The City currently relies entirely on surface water. Its primary sources are the San Joaquin River and the Delta through water purchased from Contra Costa Water District (CCWD).

This Plan fulfills several purposes: (1) it is the year 2005 Urban Water Management Plan Update as required by the Urban Water Management Planning Act; (2) it provides the analysis of water conservation measures in accordance with the guidelines of the California Urban Water Conservation Council (CUWCC), and (3) it serves as the long-term water supply plan for the City of Antioch Water System.

### 1.1 Urban Water Management Planning Act

One purpose of this Plan is to ensure the efficient use of available water supplies, as required by the Urban Water Management Act (Act). The Act became part of the California Water Code with the passage of Assembly Bill 797 during the 1983–1984 regular session of the California legislature. The Act requires every urban water supplier providing water for municipal purposes to more than 3,000 connections or supplying more than 3,000 acre-feet of water annually to adopt and submit a Plan every five years to the California Department of Water Resources (DWR). Subsequently, assembly bills have amended the Act.

### 1.2 California Urban Water Conservation Council

Addressing the efficient use of water supplies in accordance with CUWCC guidelines is another purpose of this Plan. The CUWCC is a voluntary organization comprised of water utilities, and environmental organizations, and other interested groups that is responsible for administering the implementation of water conservation measures in California. The Memorandum of Understanding Regarding Urban Water Conservation in California (MOU) (CUWCC, 1999) defines the water conservation measures or demand management measures (DMMs). The signatories of the CUWCC submit a semi-annual report regarding their implementation of DMMs. The City is not currently a MOU signatory. However, the City implements the water conservation program collaboratively with CCWD and CCWD is a signatory. This Plan provides a description of the City's water conservation program.

### 1.3 Previous Reports

Several reports have been prepared in the past decade, which address water supply and demand for the City of Antioch water system and for the Contra Costa Water District which supplies some of Antioch's water supply. An understanding of the results of these previous studies provides a broader context for preparing an updated water supply plan for the future. This section provides a summary of these recent planning reports.

Investigation of Ground-Water Resources in the East Contra Costa Area was prepared in March 1999 (Luhdorff, 1999). This investigation was a joint effort by five east county public agencies. The purpose of the study is to better define the aerial and vertical extent of the aquifer system, characterize the water quantity and quality, define how groundwater is recharged, how it is discharged out of the area, and define the reliable supply and whether conjunctive use plans should be developed.

The Urban Water Management Plan 2000 Update was prepared in October 2001 (Brown and Caldwell, 2001). This document provided a comprehensive summary of the existing water system, historical and projected water use, water supply (sources), water conservation best management practices, water supply versus demand comparison, and recommendations.

A Water System Master Plan Update was prepared in September 1999 (Brown and Caldwell, 1999). This document included long-term demand forecasts and water supply capital improvement recommendations to meet future water supply needs for the City of Antioch.

The Contra Costa Water District Urban Water Management Plan was prepared in December 2005 to forecast supplies and demands and describes the District's water demand management and recycled water opportunities to the year 2025. It also presents a water shortage contingency analysis and a description of the plan adoption, public coordination and planning coordination activities.

A Water System Master Plan: Updated Executive Summary was prepared in October 2001 (Brown and Caldwell, 2001). This document summarizes changes in water use characteristics and study area demographics and presents significant findings, conclusions and recommendations for existing and future facilities through the year 2028.

The Antioch/DDSD Recycled Water Project Facilities Plan was prepared in August 2005 to describe the project currently being pursued by Delta Diablo Sanitation District (DDSD) and the City to expand recycled water use within the City.

## 1.4 Public Agency Coordination

This Plan has been prepared with the cooperation and assistance of the City of Antioch, the Contra Costa Water District, and the Delta Diablo Sanitation District. Table 1-1 summarizes the efforts the City has taken to include additional agencies and citizens in its planning and preparation process.

**Table 1-1. Coordination with Appropriate Agencies (DWR Table 1)**

Check at least one box on each row	CCWD	DWR	DDSD	General Public	County Planning Department	City of Antioch
Participated in developing the plan	✓		✓			✓
Commented on the draft	✓		✓			✓
Attended public meetings						
Was contacted for assistance	✓		✓			✓
Was sent a copy of the draft plan	✓					✓
Was sent a notice of intention to adopt						
Not involved / No Information						

## 1.5 Public Participation

The Act requires the encouragement of public participation and a public hearing regarding the Urban Water Management Plan. This hearing provides an opportunity for the City of Antioch's residents and employees to learn about the water supply situation and the plans for providing a reliable, safe, high-quality water supply for the future. The hearing also allows people to ask questions regarding the current situation and the viability of future plans.

## 1.6 Plan Organization

This report is divided into eight sections and eight appendices. Following this introductory section, Section 2 describes the existing water system. Information about historical and projected water use is presented in Section 3. Section 4 describes the water sources used for water supply. Section 5 provides information on recycled wastewater and its potential for use as a water resource in the City. An analysis of the water conservation demand management measures (DMMs) is presented in Section 6. A comparison of water supply and water demand is presented in Section 7. Section 8 provides recommendations.

Appendix A contains a list of abbreviations used in the report. Appendix B contains a checklist of the California Department of Water Resources requirements for Urban Water Management Plans. Appendix C contains the Department of Water Resources requirements for Demand Management Measures. The City's past water conservation ordinance is included in Appendix D. Appendix E contains the City's landscaping and irrigation regulations. The City's landscape guidelines for planned developments are included in Appendix F. Appendix G contains the resolution to adopt the plan. A list of references used in the report is provided in Appendix H.

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## SECTION 2

### DESCRIPTION OF EXISTING WATER SYSTEM

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This section describes the City of Antioch's (City's) existing water system. This section includes a description of the service area and its climate, existing and proposed water system facilities, including the surface water supply and treatment, the booster pump stations, the reservoirs, and the piping system.

#### 2.1 Description of Service Area

The Antioch water system serves about 29,860 connections within Contra Costa County. Figure 2-1 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 2-1. This Urban Water Management Plan (Plan) also addresses the land which may be developed through build-out and for which the City is likely to be relied on for water service.

The service area is primarily residential, with small areas of commercial and industrial land use. Figure 2-2 provides an overview of existing land use planning, based on the current Antioch General Plan and Use Element Map (City of Antioch). For this Plan, we assume 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 detail in Section 3.

#### 2.2 Topography

The area extends from steep hilly terrain in the south and west portions of the service area to flat with a gentle slope in the northeast portion of the service area. Elevations in this area range from sea level to over 700 feet. Generally, the service area is limited to elevations less than 560 feet. Four pressure zones are currently required to distribute water and eventually six to seven may be necessary depending on future land development.

#### 2.3 Climate

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 (Table 2-1), but the extreme low and high temperatures have been 18 and 117 degrees Fahrenheit, respectively. Also shown in Table 2-1, 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 2 to 3 inches, but records show that the monthly precipitation has been as high as 9 inches and as low as 0 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.

**Table 2-1. Climate (DWR Table 3)**

Month	Standard Average ET <sub>o</sub> (in.) <sup>a,b</sup>	Average Rainfall (in.) <sup>a,b</sup>	Average Temperature (F) <sup>c</sup>
January	0.95	2.74	45.3
February	1.75	2.41	50.5
March	3.48	1.91	54.3
April	5.37	0.88	58.8
May	6.88	.38	64.9
June	7.79	0.10	71.0
July	8.29	0.02	74.1
August	7.24	0.05	73.3
September	5.33	0.21	70.7
October	3.63	0.70	63.8
November	1.76	1.66	53.5
December	1.01	2.12	46.0
<b>Annual</b>	<b>53.48</b>	<b>13.18</b>	<b>60.5</b>

<sup>a</sup>Source: Western Regional Climate Center website <http://www.wrcc.dri.edu/COMPARATIVE.html>

<sup>b</sup>Period of Record: 1955-2004

<sup>c</sup>Source: California Irrigation Management Information System (CIMIS) website  
<http://www.cimis.water.ca.gov/cimis/data.jsp>

## 2.4 Water Supply Facilities

The principal sources of raw water supply are the San Joaquin River and the Contra Costa Canal (Canal), which can be stored in the Antioch Municipal Reservoir. Canal water, purchased from the Contra Costa Water District (CCWD) is pumped from Rock Slough and Old River in the western Delta. The pipelines from the Contra Costa Canal to the water treatment plant (WTP) have a capacity over 60 million gallons per day (mgd), well above the maximum predicted future water demand. Water from the Canal can be pumped into the municipal reservoir or directly to the WTP. The California Department of Health Services (CDHS) requires that river water must be first pumped to the municipal reservoir before going to the WTP. The WTP has a maximum capacity of about 28 mgd. The City will soon construct improvements to increase the maximum capacity to 36-38 mgd. Treated water flows into two 1.0-million-gallon (mg) clear wells before entering the distribution system. Figure 2-3 is a schematic diagram of the existing and proposed water system. Table 2-2 summarizes existing storage facilities and booster pumping stations (BPSs) by zone. Table 2-3 presents characteristics of existing and proposed reservoirs through 2028, as recommended in the Water System Master Plan (1999).

The existing WTP has a design capacity of 28 mgd. There is ample room to expand the WTP for a total of 48 mgd of water treatment capacity. The former two connections are operating; the latter planned as part of future water system expansion. In addition to expansion, the City improved water source reliability by purchasing treated water from CCWD produced at the Randall-Bold Plant (RBP), using a connection to the CCWD multipurpose pipeline at Hillcrest Avenue, the DWD conveyance system or a new BPS at the RBP and a new pipeline. The City plans to begin construction on a 10-mgd expansion to Plant B in 2006.

**Table 2-2. Existing Reservoir Storage and Booster Pumping Station Capacity<sup>a</sup>**

Zone	Booster Pumping Station				Reservoir			
	Name	Configuration, number and gpm	TDH, ft	Firm Capacity, mgd	Name	Capacity mg	Key Elevations overflow/base,ft	Service Elevation Range, ft
I	Zone I <sup>b</sup>	3 @ 3,300 1 extra slot	120	9.5	"D" Street 2A 2B	1.0 1.0 1.0	133.5/120 133.5/118.5 133.5/118.5	0 to 50
II	Zone II	5 @ 2,400 2 @ 4,800 1 @ 1,200 2 extra slots	125	24.2	Central 3 mg Donlon Larkspur	0.5 3.0 2.0 2.0	264/229 256/230 248/200 248/216	0 to 170
III East	Hillcrest Lone Tree	3 @ 1,500 1 extra slot 3 @ 1,800 1 extra slot	94 105	4.3 5.2	Hillcrest Lone Tree	2.5 2.5	340/292 340/308	70 to 240
III West	Donlon	2 @ 1,200 1 @ 600 + 1 slot @ 1,200	160	2.6	Cambridge	2.5	355/320	130 to 255
IV East	Dallas Ranch	3 @ 1,400 + 1 extra slot	220	4.0	Empire Mine	3.5	510/485	175 to 410
IV West	Cambridge	2 @ 340 1 extra slot	131	0.5	Mira Vista Hills	0.5	455/420	200 to 355

<sup>a</sup>These facilities are existing in 2005.

<sup>b</sup>The Zone 1 booster pumping station is currently inoperable.

**Table 2-3. Characteristics of Existing and Proposed Reservoirs through Year 2028**

Pressure Zone Served	Name or Location	Volume, mg	Overflow elevation, feet	Base elevation, feet
I	Clearwell storage	2.0 <sup>a,b</sup>	133.5	118.5
I	D street reservoir	1.0 <sup>b</sup>	133.5	120
<b>Subtotal</b>		3.0		
II	Water treatment plant 3 mgd (East of Lone Tree Way near Dandridge Court)	0.5 <sup>b,c</sup>	264	229
II	Donlon reservoir	3.0 <sup>b</sup>	256	230
II	Larkspur reservoir	2.0 <sup>b</sup>	248	200
II	Larkspur reservoir I	2.0 <sup>b</sup>	248	216
II	Larkspur reservoir II	2.0 <sup>d,e</sup>	248	216
<b>Subtotal</b>		9.5		
III	Cambridge reservoir (West)	2.5 <sup>b</sup>	355	320
III	Lone Tree reservoir (East)	2.5 <sup>b</sup>	340	308
III	Hillcrest & Lone Tree reservoir (East)	2.5 <sup>b</sup>	340	292
III	Southern Zone III west of Deer Valley Road (East)	1.7 <sup>d</sup>	330	295
<b>Subtotal</b>		9.2		
IV	Mira Vista Hills reservoir (West)	0.5 <sup>b</sup>	455	420
IV	Empire Mine reservoir I (East)	3.5 <sup>b</sup>	510	485
<b>Subtotal</b>		4.0		
<b>Total</b>		25.7 <sup>f</sup>		

<sup>a</sup>Part of this (1.0 mg) storage is allocated for pumping equalization in the WTP and for WTP filter backwashes.

<sup>b</sup>Existing or under construction.

<sup>c</sup>Not counted as part of Zone II storage since the overflow is above normal Zone II operating hydraulic gradeline.

<sup>d</sup>Proposed.

<sup>e</sup>Located in Zone II but provides some Zone I storage.

<sup>f</sup>Net storage available to the distribution system is 24.7 mg.

## 2.5 Distribution System

The Antioch distribution system consists of four primary pressure zones. Water pressure typically is maintained between 40 and 100 pounds per square inch gage (psig).

### 2.5.1 Pressure Zone I

Pressure Zone I distribution system serves the older residential sections of the City, the original central business district and some major industrial users. Ground elevations range from sea level to 50 feet. Zone I is served by gravity principally through a 24-inch-diameter main from the WTP. The BPS to service Zone I is out of service and is no longer needed because the installation of pressure reducing valves (PRV) between Zones I and II allows water to flow down to Zone I from Zone II. Three of these exist and five more PRVs are recommended.

### 2.5.2 Pressure Zone II

Pressure Zone II serves primarily residential and commercial users and has ground elevations ranging from sea level to 170 feet. One area above 170 feet in elevation is supplied by the small Sunset BPS. The principal water mains in Zone II are 10, 12, 16, 20, 24 and 30 inches in diameter. The system is supplied by

two Zone II BPS, one built in 1967 and one built in 1988, which take suction from the WTP clearwells. There is emergency WTP generator capacity available to operate all Zone II booster pumps should there be a power outage. Four water storage reservoirs are located in Zone II.

### 2.5.3 Pressure Zone III East

Pressure Zone III East will encompass much of the new residential and commercial growth in the City. Zone III East generally extends south from the Canal, with some development north of the canal in the eastern portion of the City. It is bounded on the west by Contra Loma Regional Park and on the east by a Southern Pacific Railroad right-of-way. The zone border extends south to the city limits but excludes most of the area south of Lone Tree Way and west of Deer Valley Road. Currently, Zone III East is about 65 percent developed. Three BPSs, Hillcrest and Lone Tree 1 and 2, and two reservoirs, Hillcrest and Lone Tree, serve Zone III East. Zone III East is served with 12, 16, 20 and 24 inches in diameter water mains. Future development in the southeast in Lone Tree Valley will eventually require additional Zone III East reservoir storage, probably located on the south side of Lone Tree Valley. The Dallas Ranch BPS possibly will need expansion or the City will construct a new BPS in Lone Tree Valley. The Bear Ridge BPS serves as an isolated high area west of Hillcrest Avenue. Isolated higher lots may require individual booster pumps.

### 2.5.4 Zone III West

Zone III West is a partially developed residential area on the west side of the City. Most existing development is residential but some commercial development will occur in the western portion of this zone. After the completion of the planned developments at Meadowlands and Black Diamond Ranch, this zone will encompass about 1.25 square miles. It is bound by the Canal, Black Diamond Mines, Contra Loma Regional Park, and the city limits. Zone III West is served by the Donlon BPS which fills the Cambridge Reservoir. Water mains of 8, 10, 12 and 16 inches in diameters serve the Zone III West development. Additional transmission facilities will be needed to accommodate planned development within this zone.

### 2.5.5 Zone IV West

The Zone IV West facilities serve to the higher elevations of the Mira Vista Hills Subdivision and the higher elevations in Black Diamond Ranch. The Cambridge BPS will have emergency power facilities to convey water into Zone IV West and the Mira Vista Hills Reservoir. In 2006/2007 Zone IV West will be used to convey water to the south to the proposed higher elevation Sierra Vista Development. New 8, 10 and 12 inches in diameter mains will serve the Zone IV West development.

### 2.5.6 Zone IV East

Zone IV East is under construction. It includes, or will include all of the Black Diamond Estates; all of the Higgins Ranch; and parts of the Dallas Ranch, Black Diamond Knolls, and Diablo West developments. Zone IV East is bound by Contra Loma Regional Park on the west, Zone III East on the north and east, and the proposed new Urban Limit Line on the south. The Dallas Ranch BPS serves Zone IV East. It initially included three 1,400-gpm pumps (a firm capacity of 4.0 mgd), supported with emergency power facilities. There is space for a fourth pump to raise the future firm capacity to 6.0 mgd. The BPS conveys water to Zone IV East and to the Empire Mine Reservoir. The reservoir has a capacity of 3.5 mg and an overflow elevation of 510 feet.

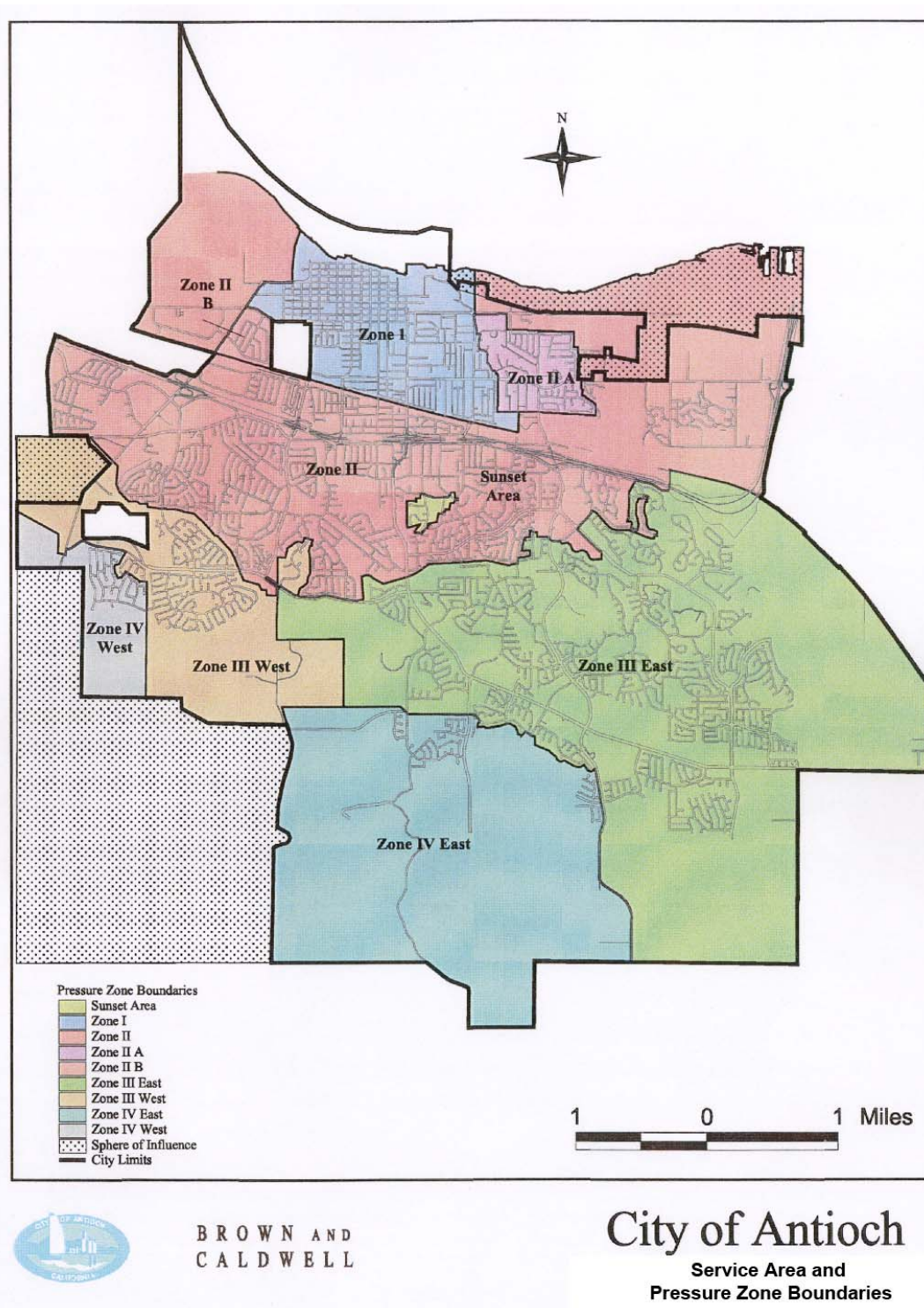
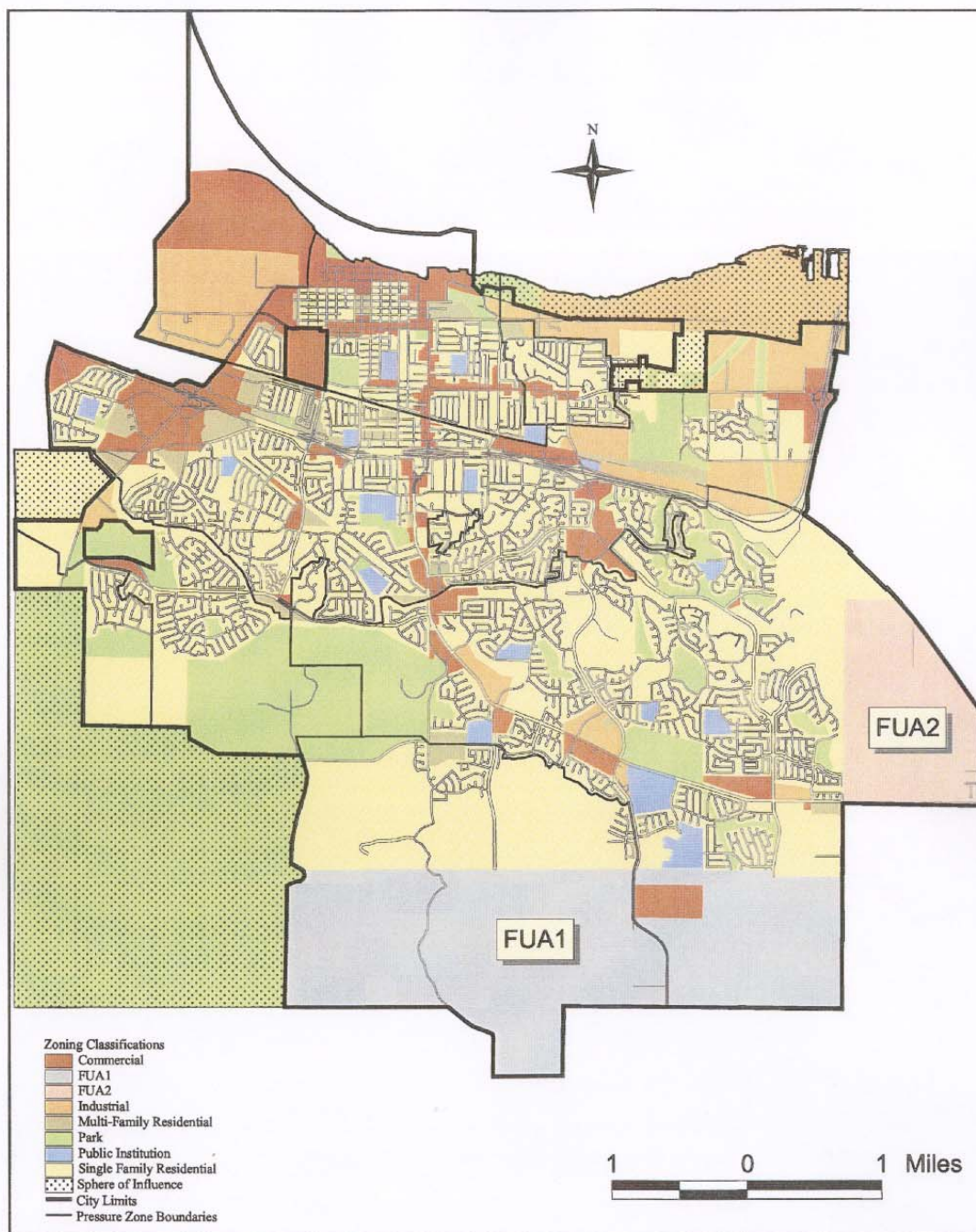


Figure 2-1. Service Area and Pressure Boundaries

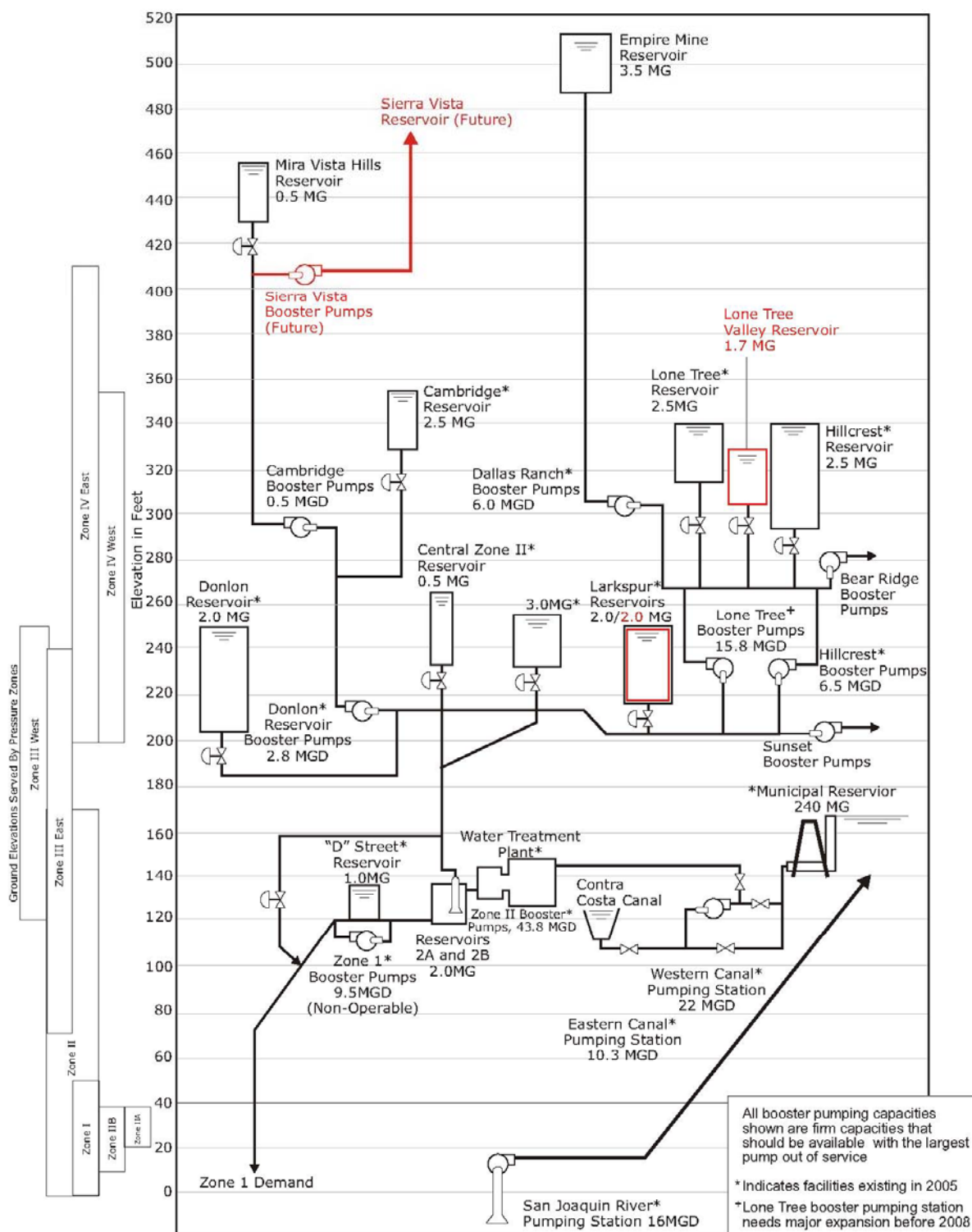




BROWN AND  
CALDWELL

City of Antioch  
Zoning Map

Figure 2-2. Zoning Map



**Figure 2-3. Existing and Proposed Water System Schematic**

## SECTION 3

### HISTORICAL AND PROJECTED WATER USE

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Water demand projections provide the basis for sizing and staging future water facilities. Water use and production records, combined with projections of population, employment, and urban development, provide the information necessary for estimating future water requirements. This section presents an analysis of available demographic and water use data and the resulting projections for future water needs in the Antioch water system.

#### 3.1 Population, Employment, and Housing

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 and Use Element Map (1989) for future development that would impact water use.

ABAG population, housing and employment estimates were used through 2025. The employment data for 2005 and 2015 were interpolated from the 2000 and 2010 data because the data were not included in the 2002 ABAG report. The 2005 population and housing data are based on current estimates from the California Department of Finance. This Plan only shows projections through 2025.

Future industrial development will probably occur in Zones I and II along the major transportation routes. There are also small areas zoned as industrial in Zone III East. The remainder of the study area is likely to develop to residential and commercial uses. Residential water requirements vary on a per-acre basis, depending on the density of dwelling units and the number of persons per dwelling unit. Based on data from California Department of Finance, the average number of persons per household is approximately 3.1.

Peak-hour water requirements are greater for residential uses than for industrial and commercial areas on a per-acre basis. Areas identified in the Antioch General Plan as suitable for either residential or commercial/industrial development have been treated as residential areas, providing a conservative basis for projecting water demands.

A summary of the historic and projected population, housing, and employment within the Antioch water system is presented in Table 3-1 and illustrated in Figure 3-1.

**Table 3-1. Population, Housing, and Employment Estimates and Projections (DWR Table 2)**

Year	Households	Population	Employed Residents
1990 <sup>a</sup>	21,729	63,062	30,130
2000 <sup>a</sup>	29,656	91,293	43,811
2005 <sup>b</sup>	32,560	101,049	47,756
2010 <sup>a</sup>	34,660	102,900	51,700
2015 <sup>c</sup>	35,274	109,350	55,750
2020 <sup>a</sup>	39,330	115,800	59,800
2025 <sup>a</sup>	40,870	118,800	62,500

Note: Dashed line represents division between historical and projected data.

<sup>a</sup>Based on ABAG Projections 2002: Forecasts for the San Francisco Bay Area.

<sup>b</sup>Population and number of households is based on City/County Population and Housing Estimates, California Department of Finance, Jan 2005. Employed Residents is interpolated based on ABAG Projections 2002.

<sup>c</sup>Population and Employed Residents are interpolated based on ABAG Projections 2002. Number of households assumes 3.1 persons per household.

As shown in the above table, a large increase in the number of employees over the next 20 years is expected. The highest job growth in Antioch is projected to be in service employment. The past, current and projected number of connections and deliveries by classification are shown in Table 3-2 (Haas-Wajdowicz Julie, 2005).

**Table 3-2. Past, Current and Projected Water Deliveries (DWR Table 12)**

Year	Water Use Sectors		Single-family	Multi-family	Commercial	Industrial	Institutional / School	Irrigation	Other	Total
2000	Metered	# of Accounts Deliveries AF/Y	24,847 11,448	697 1,558	603 1,490	18 924	94 447	938 1,915	152 120	27,349 17,902
	Unmetered	# of Accounts Deliveries AF/Y	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
2004	Metered	# of Accounts Deliveries AF/Y	27,181 14,872	694 1,617	632 1,204	19 979	78 274	1,067 2,699	187 193	29,858 21,838
	Unmetered	# of Accounts Deliveries AF/Y	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
2010	Metered	# of Accounts Deliveries AF/Y	28,740 14,483	770 1,758	683 1,494	20 1,052	96 395	1,107 2,529	187 170	31,602 21,900
	Unmetered	# of Accounts Deliveries AF/Y	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
2015	Metered	# of Accounts Deliveries AF/Y	30,577 15,409	819 1,870	727 1,590	22 1,119	102 420	1,177 2,691	199 181	33,623 23,300
	Unmetered	# of Accounts Deliveries AF/Y	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
2020	Metered	# of Accounts Deliveries AF/Y	32,349 16,302	867 1,978	769 1,682	23 1,184	108 445	1,246 2,847	210 191	35,571 24,650
	Unmetered	# of Accounts Deliveries AF/Y	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
2025	Metered	# of Accounts Deliveries AF/Y	33,202 16,732	890 2,030	789 1,726	24 1,215	110 457	1,278 2,922	216 197	36,509 25,300
	Unmetered	# of Accounts Deliveries AF/Y	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0

In summary, from 1990 to 2000 the Antioch population increased 44.8 percent, which is a growth rate of approximately 4.5 percent per year. From 2000 to 2005, the Antioch population increased 10.7 percent, which is a growth rate of approximately 2.1 percent per year. By 2025, population is expected to increase 17.6 percent, from 101,049 in 2005 to 118,800 in 2025, which is an average of 0.9 percent growth rate per year (ABAG, 2002). Employment is expected to grow 31 percent during the same period, which equates to an annual employment growth rate of 1.5 percent (ABAG, 2002).

### 3.2 Historical Water Use

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 water treatment plant (WTP), which includes all water delivered to residential, commercial, and public authority connections, as well as unaccounted-for water. The historical data included average daily water production and total average annual water production. Historical water production from 1975 to 2004 is shown in Table 3-3. There currently is water loss between the points of Antioch's water diversion (the San Joaquin River and the Contra Costa Canal) and flow leaving the WTP. 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.

**Table 3-3. Historical Water Use**

Year	Annual Average, AF/Y	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
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	11.6
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	15.4
2000	19,327	17.21
2001	20,044	17.89



Year	Annual Average, AF/Y	Average Daily, mgd
2002	20,906	18.66
2003	20,686	18.46
2004	21,576	19.21
Average 2000 to 2004	20,508	18.29

Source: City of Antioch Water Production (treated water).

### 3.2.1 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 street flushing. Table 3-4 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 3-4. Historical Unaccounted-for Water**

Year	Water Production <sup>a</sup> , AF/Y	Water Sales, AF/Y	Unaccounted-for water AF/Y	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 <sup>b</sup>	21,576	21,837	-261	-1.2
Average 2000 to 2004	20,508	19,967	541	2.7

<sup>a</sup>Water production (treated water).

<sup>b</sup>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.

### 3.2.2 Annual Water Supplied

Historical records of the annual amount of water purchased from CCWD and pumped from the San Joaquin River are shown in Table 3-5. As was mentioned previously, there is some water loss between the point of water pumping and the flow leaving the WTP including filter backwash water and water in water treatment sludge. Within two years, the City will bring online new facilities that will virtually eliminate such losses at the WTP. Additionally, evaporation from the municipal reservoir results in further minor losses.

**Table 3-5. Water Supplied at Antioch's Diversion Points**

Year	Purchased from CCWD, AF/Y	Pumped from San Joaquin River, AF/Y	Total, AF/Y
2000	13,000	6,327	19,327
2001	15,489	4,555	20,044
2002	13,852	7,054	20,906
2003	11,916	8,743	20,686
2004	15,501	5,511	21,576

### 3.3 Unit Water Use

Unit water use factors were developed to estimate future water needs based on housing projections discussed previously. Residential future 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 is available (DOF, 2000-2004). 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. The water consumption is estimated at 190 gallons per person per day, 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 used in this current study are shown in Table 3-6.

**Table 3-6. Unit Water Use Factors**

Classification	Unit Water Use Factor	
	gpd/household	AF/Y / household
Single-family residential	454 <sup>a</sup>	.5090
Multi-family residential	252 <sup>a</sup>	.2820
Population	190 <sup>ab</sup>	.2129
	186 <sup>a</sup>	.2082

<sup>a</sup>Gallons per day

<sup>b</sup>Includes unaccounted for water and water losses between diversion and flow leaving the WTP.

### 3.4 Projected Water Demands

Water demands through the year 2025 were estimated based on the unit water use factors (see Table 3-6) and the population projections (see Table 3-1). These projections are shown in Table 3-7. By 2025, water demands are expected to increase by 16 percent, from about 19.2 mgd (21,837 AF/yr) in 2004 to 22.0 mgd (25,284 AF/yr), in 2025. Impacts to water use due to any 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 504 percent, with a growth rate of approximately 5 percent per year. The projected water demand growth rate between 2004 and 2025 is 16 percent or approximately .8 percent per year, which is less than what has historically occurred.

**Table 3-7. Total Projected Water Demands**

Year	Annual Average	
	AF/Y	mgd
2010	21,900	19.55
2015	23,273	20.78
2020	24,645	22.00
2025	25,284	22.57

### 3.5 Water Sales to Other Agencies

There are no existing or projected sales of water from the City to other agencies (Table 3-8)

**Table 3-8. Sales to Other Agencies, AF/Y (DWR Table 13)**

Water Distributed	2000	2005	2010	2020	2025
Name of Agency	0	0	0	0	0
<b>Total</b>	0	0	0	0	0

### 3.6 Additional Water Use

Sources of additional water uses and losses are list in Table 3-9 below. There are no existing or projected uses/loses of saline barriers, groundwater recharge, conjunctive use, raw water, or recycled water within the City. Unaccounted for system losses have been discussed in the previous section.

**Table 3-9. Additional Water Uses and Losses, AF/Y (DWR Table 14)**

Water Use	2000	2004	2010	2015	2020	2025
Saline barriers	0	0	0	0	0	0
Groundwater recharge	0	0	0	0	0	0
Conjunctive use	0	0	0	0	0	0
Raw water	0	0	0	0	0	0
Recycled	0	0	0	0	0	0
Other (define)	0	0	0	0	0	0
Unaccounted-for system losses	353	407	461	490	520	532
<b>Total</b>	353	407 <sup>a</sup>	461	490	520	532

<sup>a</sup>Due to erroneous data, the unaccounted for system losses could not be directly calculated and instead were interpolated.

### 3.7 Total Water Use

Total Water Use is the sum of water use by customer categories, sales to other agencies and additional water uses (Table 3-10).

**Table 3-10. Total Water Use, AF/Y (DWR Table 15)**

Water Use	2000	2004	2010	2015	2020	2025
Total of Tables 12, 13, 14	18,253	22,245	22,371	23,770	25,170	25,822

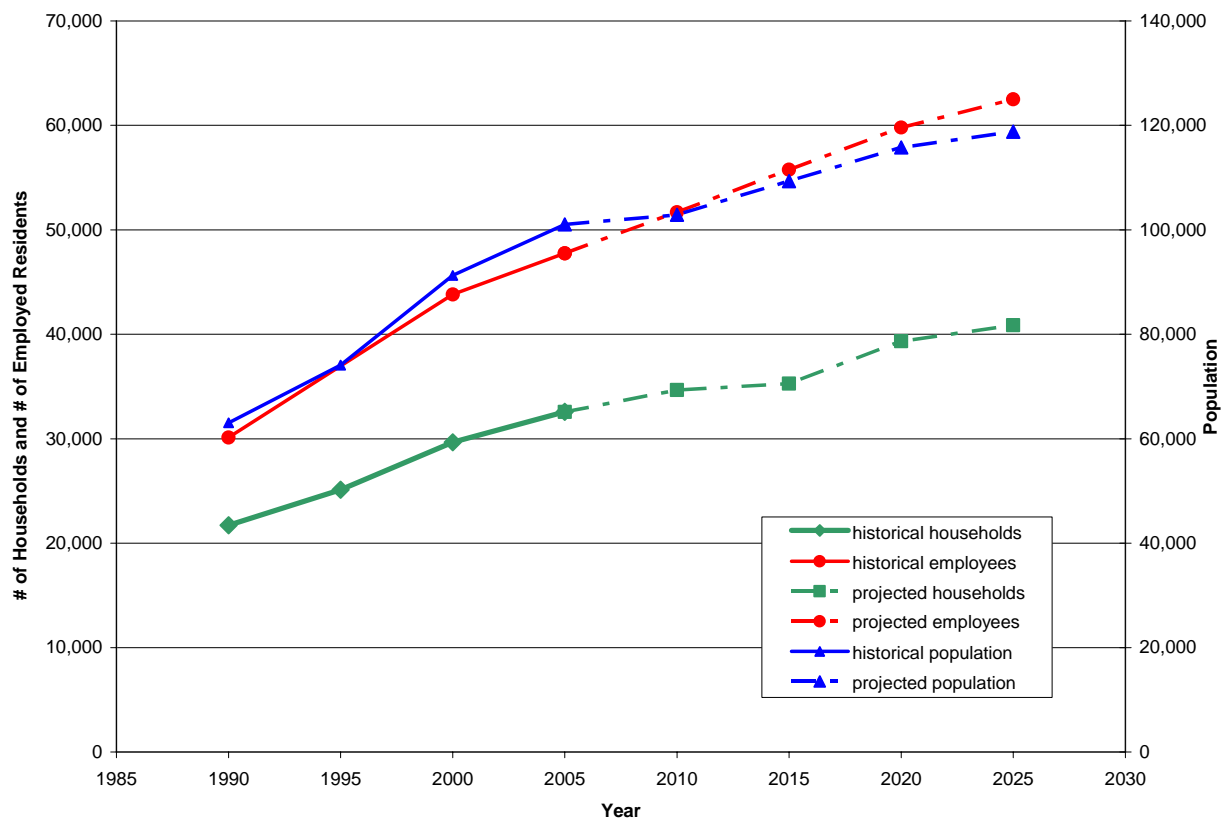


Figure 3-1. Historical and Projected Population, Housing, and Employed Residents

## SECTION 4

### WATER SUPPLY QUANTITY AND QUALITY

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Water sources include the Contra Costa Canal (Canal), San Joaquin River, municipal reservoir, and wells located within the City limits. This section describes the surface water and groundwater sources, quantities, supply constraints, and the water quality of the water supply sources. In addition, this section describes current and projected water supplies, water supply reliability and vulnerability, water shortage expectations, and water shortage revenue and expenditure impacts.

#### 4.1 Surface Water

This section provides a description of the City's surface water supply as well as the physical and legal constraints of this supply. Currently, the City receives surface water from the Canal, the San Joaquin River, and the municipal reservoir.

##### 4.1.1 Contra Costa Canal

The Contra Costa Water District (CCWD) supplies water to Antioch from diversions at Rock Slough and Old River in the Sacramento-San Joaquin Delta through the Contra Costa Canal, operated by CCWD for the United States Bureau of Reclamation (Bureau). The Raw Water Division of CCWD wholesales water to Antioch for about \$1,500 per million gallons (mg) (\$500 per acre-foot). The cost for pumping from the Canal to the municipal reservoir or the WTP is about \$30 per mg. Antioch's current annual agreement is for a peak demand of 25,000 gpm (36.0 mgd). CCWD presently draws only 67 percent of its annual 195,000 acre-feet (63,500 million gallons) allotment from the Delta. Unless constrained by drought conditions, CCWD is prepared to sell to Antioch all the City's projected water needs through the year 2028. Based on recent studies, the existing canal does not have sufficient capacity to carry Antioch's increased future flow together with those required by other customers, but CCWD has installed a pipeline parallel (multipurpose pipeline) to the canal to satisfy such demands.

Historically, the quality of the water in the Canal has been beyond the direct control of CCWD. It depends on overall Delta water quality which is, in turn, affected by a multitude of factors including upstream reservoir releases, tidal changes, discharge of nearby agricultural users, export rates of the pumps for the State Water Project and Central Valley Project, and standards and objectives set by the State Water Resources Control Board (SWRCB) and the United States EPA. The Canal was one of the first units in the Central Valley Project, and the Bureau has a contract to deliver the water to the Canal, but quality requirements are not included. According to the contract, the Bureau is "...to maintain the quality of the raw water to be delivered hereunder at the highest level reasonably attainable and consistent with municipal and industrial use." The Bureau is not required to deliver any specific water quality level for the Canal. The future water quality depends, primarily, on two factors:

- Operation of the Los Vaqueros Project
- Outcome of the Bay-Delta proceedings (See Section 4.2.3)

The Los Vaqueros Project, approved by the voters in November 1988, has resulted in a new 100,000-acre-foot storage reservoir located southwest of Brentwood. This project allows CCWD to draw low salinity (as measured by total dissolved solids [TDS] or chlorides) water from the Delta during high runoff periods. This water is now available for blending with normal withdrawals from Rock Slough. Los Vaqueros

Reservoir also serves as emergency storage in the event of a chemical spill in the Delta or other disruption such as a levee failure.

#### 4.1.2 San Joaquin River

The City and earlier local inhabitants have drawn water from the San Joaquin River as a primary source for over 140 years. Before the growth of the irrigated rice industry around World War I, there was sufficient fresh water. However, as this major summer diversion began and the flows into the Delta decreased, saline bay waters moved further upstream replacing the fresh water. The City sought judicial relief, filing a suit asking the court to restrain the upstream Williams Irrigation District from diverting Sacramento River waters. The court granted an injunction in January 1921, but the California Supreme Court reversed it in March 1922. The Supreme Court also pointed out that a physical solution, moving the City's diversion point upstream, was available. Since that time, the City has been able to pump from the San Joaquin River for varying periods up to more than 300 days per year. No pumping occurred during the drought period of 1976 to 1977. Similarly, from 1986 to March 1991, the City was only able to pump seven days a year. The City generally stops pumping if the mean chloride concentration in the river water exceeds 250 milligrams per liter (mg/L). If the chloride concentration in the municipal reservoir water is particularly low, the City may continue limited pumping to the municipal reservoir when the chloride concentration exceeds 250 mg/L in the river.

The State of California Department of Water Resources (DWR) and the City have an existing agreement, which specifies that the City will be able to pump water with a chloride content less than 250 mg/L at least 208 days per year. If the long-term average days of river pumping are less than 208 days per year, DWR will pay for one-third of the incremental difference in cost to the City between using river water and Canal water. This contract runs until 2008. When there is a pumping shortfall, DWR now pays the City for one-third the incremental costs, including those added raw water costs associated with the Los Vaqueros Project.

In coming years, river water quality will continue to be impacted by decisions outside the City's control. State plans call for increased water diversions from the Delta to satisfy water demands in the San Joaquin Valley and areas south and west. Any decrease in the net flow from east to west in the San Joaquin River at Antioch will tend to reduce the availability of low chloride waters. As indicated previously, the SWRCB has established water quality standards for the Delta, including a provision of 150 mg/L maximum concentration of chloride at Antioch's River pumping station for a minimum duration depending on net Delta outflow (see Table 4-1). If these standards are maintained, the river can continue as an intermittent, but important, water source for the City.

**Table 4-1. Water Quality Standards for Chloride**

Location	Maximum Concentration, mg/L	Frequency days/yr	Water Year Classification
Contra Costa Canal intake at Rock Slough	250 <sup>a</sup>	All	--
Contra Costa Canal intake at Rock Slough or Antioch intake on San Joaquin River	150 <sup>b</sup>	240	Wet
		190	Above Normal
		175	Normal
		165	Dry
		155	Critically Dry

Source: State Water Resources Control Board, Water Quality Control Plan for the Sacramento San Joaquin Delta.

<sup>a</sup>Maximum mean daily concentration.

<sup>b</sup>Maximum mean daily concentration at intervals of not less than 2 weeks' duration.

<sup>c</sup>Number of days that chloride level has been less than 150 mg/L.

The City can presently draw no more than 16.0 mgd from the San Joaquin River when water quality permits any withdrawal because of the limited capacity of the river pumping station and the raw water pipeline from the river to the municipal reservoir. Our inquiries with the Water Rights Division of SWRCB identified



no quantity limitation on the City's appropriation from the San Joaquin River provided that diverted water is used beneficially.

Historically, in the last five years the City has pumped an average of 6,438 AF/year from the San Joaquin River. For planning purposes, in normal years, it is assumed that this amount will be available. This is more conservative than the existing agreement of 208 days per year at 16 mgd or about 10,200 AF/year. In 1998, a very wet year, the quality of the water was sufficient to allow the City to pump 12,614 AF. In comparison, over the last five years the City has taken an average of 13,951 AF/year from the CCWD.

#### 4.1.3 Impacts of Regulatory Processes

There are currently two parallel ongoing regulatory processes, which may affect the City's withdrawals from the San Joaquin River, the CALFED Bay-Delta Program and the SWRCB Bay-Delta Hearings.

The CALFED Bay-Delta Program is intended to develop a long-term plan that will improve the comprehensive water management for the Bay-Delta System and the ecological health of the Bay-Delta. The CALFED program has four primary objectives:

- To provide high-quality raw water for the various uses in the Bay-Delta System.
- To increase the quality of the Bay-Delta ecosystem and to increase its biodiversity.
- To optimize the use of Bay-Delta water supply so maximum water quantities are available in periods of maximum demand.
- To reduce system vulnerability to natural disasters.

CALFED's long-term plan is to be governed by several principles: (1) the system should be affordable, (2) the distribution of beneficial use should be equitable, (3) the plan should be possible to implement, (4) the system should be durable, (5) the plan should reduce demand conflicts within the system, and (6) the negative impacts should not be redirected to create negative impacts for other regions. Currently, there are several proposed alternatives which are under debate and are subject to change, so the impact on the City is unclear at the present time. However, certain results are likely.

It is likely that the program will work to reduce saltwater intrusion into the Delta by matching releases and withdrawals upstream of the Delta. This change would likely increase the number of days per year that the City would be able to depend on the intake on the San Joaquin River, making the City less dependent on the CCWD and lowering the unit cost of the water. However, there is a possibility that a charge may be levied upon withdrawals from the Bay-Delta in order to complete the big picture for CALFED, and an outside funding source would have to be considered, which would increase costs. The CALFED process will also likely include mandatory requirements for effective water management. These requirements will build on the demand management practices (DMMs), formerly referred to as best management practices, addressed in Section 6 of this Urban Water Management Plan.

The SWRCB hearings are primarily concerned with equitably reforming water rights for allocating responsibility in the 1995 Water Quality Control Plan among post-1914 water rights holders for the Bay-Delta watershed. The process is proceeding concurrently to the CALFED program, although not necessarily linked with it. Under all the planned alternatives proposed by the SWRCB, users with post-1914 riparian water rights (those who are in-basin) have priority over appropriative water rights holders (those who export water from the basin). As a pre-1914 riparian user, the City should have no difficulties with this process, as it would have the highest water right priority category. One of the stated objectives of the SWRCB Bay-Delta hearings is to mitigate salinity problems within the Bay-Delta. Like the CALFED program, such improvements would lead to the City of Antioch having increased ability to draw on its San Joaquin River intake. The outcome of both sets of hearings remains unclear now. The best outcome for the City would be the improvement in

water quality at the City's intake on the San Joaquin River without diminishing the City's ability to draw water from the San Joaquin River.

Until the Bay-Delta proceedings are completed, water quality will depend on past actions. In August 1978, the SWRCB issued Water Right Decision 1485, setting water quality standards in the Delta to be maintained by the State Water Project and Central Valley Project as a condition of their permit to store above and divert from the Delta. Table 4-1 presents the chloride standard for the Contra Costa Canal intake and the river diversion point for Antioch. Review of historical water quality data indicate that if the maximum daily mean for chloride is kept below 250 mg/L, the other drinking water standards should not be exceeded, with the possible exception of trihalomethanes (THMs). During disinfection of source water, organic carbon can react with chlorine to form carcinogenic compounds such as THMs and haloacetic acids (HAAs). The City is currently meeting all standards including those for THMs. We foresee no problems that will prevent the City from meeting future standards. There may, however, be a need for some treatment modifications to respond to changing regulations.

#### 4.1.4 Municipal Reservoir

The 735-acre-foot (240-mg) municipal reservoir provides supply reliability and volume for equalization storage for water pumped from the Contra Costa Canal. The reservoir also serves the secondary purposes of flood control and impoundment of local runoff. Water production from the small (1,300-acre) tributary watershed, however, is of negligible importance particularly since stormwater runoff from residential areas is now diverted around the reservoir.

The reservoir will continue to provide supply reliability and sufficient volume for equalizing the City's demand for raw water from the Canal. Use of equalizing volume, for example, permits purchase of raw water at a constant rate for periods of a month or more, depending on the season of the year. Raw water is delivered at a constant rate to the reservoir and the WTP, and is withdrawn from the reservoir at varying rates to meet fluctuating demand conditions. In the past, the ability to purchase water at uniform rates has been of significant economic value to the City. Raw water reservoir equalization may also be of value in the future. The storage volume which will be needed for equalization purposes will therefore depend upon the rate schedule and service rules which will be promulgated in coming years. It is likely, however, that the 240-mg available in the municipal reservoir will be sufficient for this purpose.

## 4.2 Groundwater

This section provides a description of the City's groundwater supply as well as the physical and legal constraints of this supply.

### 4.2.1 Local Wells

The City does not currently use groundwater nor does it plan to use groundwater by the year 2025.

**Table 4-2. Amount of Groundwater Pumped, AF/Y (DWR Table 6)**

Basin Name (s)	2000	2001	2002	2003	2004
None	0	0	0	0	0
Percent of total water supply	0	0	0	0	0

**Table 4-3. Amount of Groundwater Projected to be Pumped, AF/Y (DWR Table 7)**

Basin Name (s)	2010	2015	2020	2025
None	0	0	0	0
Percent of total water supply	0	0	0	0

### 4.3 Desalination

As part of the San Francisco Public Utility Commission's (SFPUCs) Capital Improvement Plan (CIP), desalination has been identified as a potentially viable additional source of water. The following description of the SF Bay Area Desalination Plant study is provided on the SFPUC website (<http://www.sfwatwer.org>):

This project, entered into jointly by the four regional water systems, San Francisco Public Utilities Water Department (SFPUC), East Bay Municipal Utilities District (EBMUD), Santa Clara Valley Water District (SCVWD) and Contra Costa Water District (CCWD), will study the feasibility of constructing a seawater desalination plant. The cost of initial feasibility study will be shared equally between the parties. MOUs will be prepared for initial and subsequent phases that will address cost sharing of those phases. Parties will also look for Federal and State funding that may be available for design and construction. Phase 1 of the Prefeasibility Study has been completed. It evaluated the different sites and recommended three sites for further study. Phase II of the Prefeasibility Study will further evaluate these sites in greater detail and will look at environmental factors, transmission capability, institutional arrangements and grant funding. Funding for additional phases will be requested as the project progresses and based on recommendations of each phase of the project.

A site located just northwest of Antioch, the East Contra Costa Power Plant site, ranked as one of the top three (<http://www.sfwatwer.org>).

**Table 4-4. Opportunities for Desalinated Water (DWR Table 18)**

Source of Water	Yield AF/Y	Start Date	Type of Use	Other
Ocean water	0	0	0	0
Brackish ocean water	0	0	0	0
Brackish groundwater	0	0	0	0
Other (such as impaired groundwater)	0	0	0	0
<b>Total</b>				

### 4.4 Transfer and Exchange Opportunities

There are no current or future planned agreements for short-term or long-term transfer and exchange within the City's service area.

**Table 4-5. Transfer and Exchange Opportunities, AF/Y (DWR Table 11)**

Transfer Agency	Transfer or Exchange	Short-term	Proposed Quantities	Long-term	Proposed Quantities
	0	0	0	0	0
<b>Total</b>	0	0	0	0	0

### 4.5 Current and Projected Water Supplies

Table 4-6 summarizes the current and projected annual water supply for normal climate years. There are no expected future supply projects or programs within the City's service area. This is due to the fact that the current water supply sources more than adequately meet the projected water use identified in the water supply and demand assessment (Table 7-3).

**Table 4-6. Current and Planned Water Supplies, AF/Y (DWR Table 4)**

Water Supply Sources	2004	2010	2015	2020	2025
Surface water purchased from CCWD	40,320	40,320	40,320	40,320	40,32
San Joaquin River	7,550	7,550	7,550	7,550	7,550
Municipal Reservoir	740	740	740	740	740
Transfers in or out	0	0	0	0	0
Exchanges in or out	0	0	0	0	0
Recycled water from DDSD <sup>a</sup>	0	530	530	530	530
Desalination	0	0	0	0	0
Groundwater wells	0	0	0	0	0
Other	0	0	0	0	0
<b>Total</b>	<b>48,610</b>	<b>49,140</b>	<b>49,140</b>	<b>49,140</b>	<b>49,140</b>

<sup>a</sup>Developed from recycled water projections in the Antioch/DDSD Recycled Water Project Facilities Plan, August 2005.

**Table 4-7. Projected Normal Water Supply, AF/Y (DWR Table 40)**

	2010	2015	2020	2025
Supply	49,140	49,140	49,140	49,140
Percent of year 2005*	101.1	101.1	101.1	101.1

\*From Table 4 Base year for Normal water year.

## 4.6 Water Supply Reliability and Vulnerability

The surface water supply to Antioch could be reduced during a multiple dry-year scenario. The draft year 2005 Urban Water Management Plan for CCWD states that 85 percent of demand can be met in a second or third dry year. CCWD expects that the remaining 15 percent of demand can be met by a combination of short-term water purchases and a voluntary short-term conservation program. Note that near-term demands can be met under all supply conditions. However beginning in 2010, during the second and third years of a multi-year drought, short-term water purchases in conjunction with a request from 5 to 15 percent voluntary short-term conservation would be considered to meet demands. The maximum amount of short-term conservation expected to be necessary is 15 percent of demand.

Table 4-8 summarizes the projected year 2025 water supply for normal, single, and multiple dry-water years. It is assumed that a single dry-water year would not result in a reduction of normal year supply. For the second year of a multiple dry-year scenario, it is assumed that a 10 percent reduction in water supply from CCWD may occur and water supply from San Joaquin River will be reduced to zero due to increased salinity level. For the third and fourth year of a multiple dry-year scenario, it assumed that a reduction to 85 percent of normal year surface water supply would occur and pumping from the San Joaquin River would remain prohibited due to salinity levels. Recycled water is assumed to be unaffected by drought conditions.

Table 4-10 summarizes factors that result in inconsistent water supply. Surface water from CCWD is affected by climate. As shown in Table 4-8, years of multiple dry-weather will result in a reduction of water supply. Similar, results are shown for water supply from the San Joaquin River. However in that case, water quality is the bigger issue. Diminishing water quality levels from the San Joaquin River will occur during dry water years but can also occur if over pumping causes a significant decrease in net water flow. This is described in more detail in Section 4.2.2. If there is a need, these inconsistent sources can be supplemented by alternative sources, such as recycled water, as well as water-use efficiency measures, such as DMM/BMP and water shortage contingency plan.

**Table 4-8. Supply Reliability, AF/Y (DWR Table 8)**

Water Supply	Average / Normal Water Year	Single Dry Water Year	Multiple Dry Water Years			
			Year 1	Year 2	Year 3	Year 4
CCWD	40,320	40,320	40,320	36,290	34,270	34,270
San Joaquin River	7,550	7,550	7,550	0	0	0
Municipal Reservoir	740	740	740	0	0	0
Recycled water from DDS	530	530	530	530	530	530
Groundwater wells	0	0	0	0	0	0
<b>Total</b>	49,140	49,140	49,140	36,820	34,800	34,800
<b>Percent of Normal</b>	100.0	100.0	100.0	76.4	72.3	72.3

**Table 4-9. Basis of Water Year Data (DWR Table 9)<sup>a</sup>**

Water Year Type	Base Year (s)
Average water year	2000 to 2004
Single dry water year	1994
Multiple dry water year	1987 to 1992

<sup>a</sup>Table 4-9 lists the years upon which the data in Table 4-8 is based.

**Table 4-10. Factors Resulting in Inconsistency of Supply (DWR Table 10)**

Name of Supply	Legal	Environmental	Water Quality	Climatic
Surface water	None	None	👍	👍
Groundwater	None	None	None	None
Recycled water	None	None	None	None

## 4.7 Wholesaler (Agency) Water Supply Projections

The following Table 4-11 presents the amount of wholesale water the City projects receiving. In this case, the planned and existing sources of water available to the City are the same. As mentioned in the previous section, CCWD expected supply during multiple-dry years is 100, 90, 85 and 85 percent for the first, second, third and fourth years, respectively (Table 4-12). Expected supply from San Joaquin River during multiple-dry years is 100, 0, 0, and 0 for the first, second, third and fourth years, respectively, due to salinity level restrictions (Table 4-12).

**Table 4-11. Wholesaler Identified & Quantified the Existing and Planned Sources of Water, AF/Y (DWR Table 20)**

Wholesaler Sources	2010	2015	2020	2025
CCWD	40,320	40,320	40,320	40,320
San Joaquin River	7,550	7,550	7,550	7,550

**Table 4-12. Wholesale Supply Reliability, Percent of Normal AF/Y (DWR Table 21)**

Wholesaler	Multiple Dry Water Years				
	Single Dry	Year 1	Year 2	Year 3	Year 4
CCWD	100	100	90	85	85
San Joaquin River	100	100	0	0	0
Municipal Reservoir	100	100	0	0	0

**Table 4-13. Factors Resulting in Inconsistency of Wholesaler's Supply (DWR Table 22)**

Name of Supply	Legal	Environmental	Water Quality	Climatic
CCWD	None	None	None	👍
San Joaquin River	None	None	👍	👍

## 4.8 Water Quality of Existing Water Supply Sources

There are no anticipated affects to water supply due to water quality issues.

**Table 4-14. Current & Projected Water Supply Changes Due to Water Quality–Percentage (DWR Table 39)**

Water Source	2005	2010	2015	2020	2025
CCWD	N/A	N/A	N/A	N/A	N/A
San Joaquin River	N/A	N/A	N/A	N/A	N/A
Recycled water	N/A	N/A	N/A	N/A	N/A

## 4.9 Water Shortage Contingency Plan

This section outlines the estimated three-year minimum water supply, the actions and stages described in the Water Conservation Ordinance that will be implemented in the event of a water supply shortage, and the emergency preparedness and plans for catastrophic events.

### 4.9.1 Estimate of Minimum Supply for Next Three Years

**Table 4-15. Three-Years Estimated Minimum Water Supply, AF/Y (DWR Table 24)**

Source	Normal	Year 1	Year 2	Year 3
CCWD	40,320	40,320	36,290	34,270
San Joaquin River	7,550	7,550	0	0
Municipal Reservoir	740	740	0	0
Recycled water	530	530	530	530
<b>Total</b>	<b>49,140</b>	<b>49,140</b>	<b>36,820</b>	<b>34,800</b>

### 4.9.2 Stages of Actions and Conditions

This section describes the stages of action to be undertaken in response to water supply shortages. Included is an outline of specific water supply conditions that are applicable to each stage. Per California Water Code Section 10632 (a), the City has developed four stages of action to be undertaken in response to water supply shortages, including up to a 50 percent reduction in water supply and an outline of specific water supply conditions which are applicable to each stage.

Four stages of action to be taken during a water supply shortage have been developed. The stages will be implemented during water supply shortages according to shortage level, ranging from 5 percent shortage in Stage I to 50 percent shortage in Stage IV. The stage determination and declaration during a water supply shortage will be made by the Public Works Director. Table 4-16 describes the water supply shortage levels and stages.

- During Stage I, water alert conditions are declared and voluntary water conservation is encouraged.
  - The City maintains an ongoing public information campaign consisting of distribution of literature, speaking engagements, bill inserts, and conservation messages printed in local newspapers and on the City's internet web page.
  - The drought situation is explained to the public and governmental bodies.



- The City explains other stages and forecasts future actions.
- Educational programs in area schools are ongoing.
- Educational information is also available from the City's Customer Service desk.
- During Stage II of a water supply shortage, the shortage is moderate, 10 to 20 percent, and conservation may be voluntary, consist of allotments, and or include mandatory conservation rules.
  - The severity of actions depends upon the percent shortage.
  - The City aggressively continues it public information and education programs.
  - The City asks for 10 to 20 percent voluntary or mandatory water use reductions.
  - If necessary, the City also supports passage of drought ordinances.
- During Stage III of a water supply shortage, the shortage is severe, 20 to 35 percent, and conservation consists of allotments and mandatory conservation rules.
  - This phase becomes effective upon notification by the City that water usage is to be reduced by a mandatory percentage.
  - The City would adopt drought ordinances and implements mandatory reductions.
  - Rate changes are implemented to penalize excess usage.
  - Water use restriction is put into effect; i.e., prohibited uses can include restrictions on daytime hours for watering, excessive watering resulting in gutter flooding, using hoses without a shutoff device, non-recycling fountains, washing down sidewalks or patios, unrepaired leaks, etc.
  - The City monitors production weekly for compliance with necessary reductions. As a result of a customer consistently abusing use, the City would install a flow restrictor at the water meter.
- During Stage IV of a water supply shortage, the shortage is critical, 35 to 50 percent.
  - Conservation consists of allotments and mandatory conservation rules.
  - All steps taken in prior stages are intensified and production is monitored daily for compliance with necessary reductions.

**Table 4-16. Water Supply Shortage Stages and Conditions (DWR Table 23)**

Stage	Water Supply Conditions	Percent Shortage
I – Voluntary	Minimum – voluntary	5 to 10
II – Mandatory Conservation Phase	Moderate – voluntary allotments and/or mandatory conservation rules	10 to 20
III – Rationing Phase	Severe – allotments and mandatory conservation rules	20 to 35
IV – Intense Rationing Phase	Critical – allotments and mandatory conservation rules	35 to 50

### 4.9.3 Prohibitions

California Water Code Section 10632 (d) requires mandatory prohibitions against specific water use practices that may be considered excessive during water shortages. The City has Landscaping and Irrigation Regulations, included as Appendix E. This regulation addresses landscape and irrigation plans. In addition, the City has adopted Resolution 89-263, which addresses landscape guidelines for public open space areas within planned developments. This document is included in Appendix F. Both documents are a proactive

means of reducing the water demand in the City of Antioch. Should drought conditions warrant mandatory reductions, during Stage II of a water supply shortage, the City may adopt and implement an ordinance for mandatory conservation and water restriction plan. This ordinance may require additional tariffs for the City to enforce the plan.

The ordinance may address prohibitions on various wasteful water uses, including, but not limited to, the hose washing of sidewalks and driveways using potable water, cleaning or filling decorative fountains, and allowing plumbing leaks to go uncorrected for more than 72 hours. Table 4-17 identifies potential prohibitions and the stages during which the prohibition would be voluntary and mandatory.

**Table 4-17. Voluntary and Mandatory Prohibitions (DWR Table 26)**

Prohibitions	Stage When Prohibition is Voluntarily Requested	Stage When Prohibition Becomes Mandatory
Cleaning of Streets/sidewalks/walkways/parking areas/patios/porches or verandas	I	II, III, IV
Washing cars	I	II, III, IV
Watering lawns/landscapes	I	II, III, IV
Non-permanent agriculture	I	II, III, IV
Uncorrected plumbing leaks	I	II, III, IV
Cleaning/filling/operating/maintaining levels in non-recycling decorative fountains	I	II, III, IV

#### 4.9.4 Consumption Reduction Methods

Each urban water supplier may use any type of consumption reduction methods in its water shortage contingency analysis that would reduce water use, are appropriate for its area, and have the ability to achieve a water use reduction consistent with up to a 50 percent reduction in water supply. California Water Code Section 10632 (e) requires the water supplier to provide consumption reduction methods in the most restrictive stages of a water shortage. The City will use the consumption reduction methods proposed in Table 4-18.

**Table 4-18. Consumption Reduction Methods (DWR Table 27)**

Consumption Reduction Methods	Stage When Method Takes Effect	Projected Reduction, Percent
Demand reduction program	All Stages	5 to 50
Flow restriction	III, IV	20 to 50
Restrict for only priority uses	II, III, IV	10 to 50
Use prohibitions	II, III, IV	10 to 50
Per capita allotment by customer type	III, IV	20 to 50
Plumbing fixture replacement	All Stages	5 to 50
Voluntary rationing	II	10 to 50
Mandatory rationing	III, IV	20 to 50
Excess use penalty	III, IV	20 to 50
Water conservation kits	All Stages	5 to 50
Education program	All Stages	5 to 50
Percentage reduction by customer type	III, IV	20 to 50

### 4.9.5 Penalties

Section 10632 (f) of the California Water Code requires a water supplier to penalize or charge for excessive water use, where applicable. The City, after one written warning, shall install a flow-restricting device on the service line of any customer observed by City personnel to be using water for any non-essential or unauthorized use defined in a City ordinance.

An excess use penalty per 100 cubic feet of water used in excess of the applicable allocation during each billing period shall be charged by the City for all service rendered on and after the effective date of an ordinance. Repeated violations of unauthorized water use will result in discontinuance of water service. Penalties and charges and the stage during which they take effect are displayed in Table 4-19.

**Table 4-19. Penalties and Charges (DWR Table 28)**

Penalties or Charges	Stage When Penalty Takes Effect
Penalty for excess use	III, IV
Charge for excess use	III, IV
Charge per unit over allotment	III, IV
Flow restriction	III, IV
Termination of service	III, IV

### 4.9.6 Mechanisms for Determining Actual Reductions

California Water Code Section 10632 (i) requires the water supplier to develop a mechanism for determining actual reductions in water use in the course of carrying out the urban water supply shortage contingency analysis. Under normal water supply conditions, water production figures are recorded daily within and monitored by the Superintendent. Totals are reported monthly and are incorporated into water supply reports. The City maintains extensive water use records on individual customer accounts. Exceptionally high usage is identified at meter reading time by the City's electronic meter reading management system. These accounts are investigated for potential water loss or abuse problems. During all stages of water shortages, daily production figures are reported to and monitored by the Superintendent.

**Table 4-20. Water Use Monitoring Mechanisms (DWR Table 31)**

Mechanisms for Determining Actual Reductions	Type Data Expected
Water production meters	Water production meters are monitored on a monthly basis.
Customer records	Provides information on consumers exceeding maximum consumption limits and tracks abnormal increases and decreases in consumption.

### 4.9.7 Revenue and Expenditure Impacts During Shortages

Section 10632 (g) of the California Water Code requires an analysis of the impacts of each of the actions taken for conservation and water restriction on the revenues and expenditures of the water supplier. The City will establish memorandum accounts to track expenses and revenue shortfalls caused by both mandatory rationing and voluntary conservation efforts. The City will implement a surcharge to recover revenue shortfalls recorded in their drought memorandum accounts. Tables 4-21 and 4-22 display the Components of Revenue and Expenditure Impacts and summary of effects.

**Table 4-21. Proposed Measures to Overcome Revenue Impacts (DWR Table 29)**

Names of Measures	Summary of Effects
Development of reserves	There is a reserve policy (contingency fund) in place to help offset expenditure impacts during times of emergency.

**Table 4-22. Proposed Measures to Overcome Expenditure Impacts (DWR Table 30)**

Names of Measures	Summary of Effects
Development of reserves	There is a reserve policy (contingency fund) in place to help offset expenditure impacts during times of emergency.

#### 4.9.8 Catastrophic Supply Interruption Plan

The Water Code Section 10632 (c) requires actions to be undertaken by the water supplier to prepare for and implement during a catastrophic interruption of water supplies. A catastrophic event that constitutes a proclamation of a water shortage would be any event, either natural or manmade, that causes a severe shortage of water, synonymous with or with greater severity than the Stage III or Stage IV water supply shortage conditions. Facilities are inspected annually for earthquake safety. Auxiliary generators and improvements to the water storage facilities to prevent loss of these facilities during an earthquake or any disaster causing an electric power outage have been budgeted for and installed as part of the annual construction process. Table 4-23 is a summary of items discussed regarding the preparation actions for a catastrophe.

**Table 4-23. Preparation Actions for a Catastrophe**

Summary of Actions
<ul style="list-style-type: none"> <li>● Determine what constitutes a proclamation of a water shortage</li> <li>● Stretch existing water storage</li> <li>● Obtain additional water supplies</li> <li>● Determine where the funding will come from</li> <li>● Contact and coordinate with other agencies</li> <li>● Create an Emergency Response Team/Coordinator</li> <li>● Create a catastrophe preparedness plan</li> <li>● Put employees/contractors on-call</li> <li>● Develop methods to communicate with the public</li> <li>● Develop methods to prepare for water quality interruptions</li> </ul>

## SECTION 5

### RECYCLED WATER

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The purpose of this section is to provide information on recycled wastewater and its potential for use as a water resource in the service area. The elements of the section are (1) the quantity of wastewater generated in the service area, (2) the description of collection, treatment, and disposal/reuse of wastewater, (3) the current plans for water recycling, and (4) the potential for water recycling in the service area.

#### 5.1 Recycled Water Plan Coordination

Delta Diablo Sanitation District (DDSD) is the agency responsible for treating and discharging treated wastewater for the Cities of Antioch and Pittsburg and the unincorporated community of Bay Point located in Contra Costa County. The City owns and maintains a collection system that delivers raw sewage to DDSD pumping station. In 1999, DDSD, in cooperation with Calpine Corporation, initiated a project to deliver recycled water from the wastewater treatment plant to two power plants and some park areas within the City of Pittsburg. DDSD has been providing approximately 7 mgd of recycled water on average since completing construction of a 12.8-mgd Recycled Water Facility (RWF) in 2001. Currently, no recycled water is used within the City. Recently, there has been increased interest in expanding recycled water use within DDSD's service area in order to:

- **Reduce Dependence on Delta Supplies.** Delta supplies represent the bulk of water used within DDSD's service area. Expanded use of recycled water within the area would lessen the amount of Delta water diverted by the Contra Costa Water District and the City of Antioch, making water not used available for other purposes.
- **Improve Water Supply Reliability.** Since recycled water is not affected by hydrologic variability, it provides additional dry-year reliability for irrigation customers and other users.
- **Preserve Potable Water Supplies.** Using recycled water to serve non-potable demands such as irrigation will preserve high-quality drinking water supplies for potable needs.
- **Reduce Wastewater Discharges.** DDSD currently discharges its wastewater effluent into the New York Slough. With the advent of Total Maximum Daily Load (TMDL) requirements for mercury and other constituents of concern, wastewater dischargers are facing increasingly stringent regulations. Increasing the production of recycled water will help DDSD to comply with these future regulations by reducing the volume of effluent and associated trace constituents discharged directly to the receiving waters.
- **Better Utilize Existing Recycled Water Facilities.** Currently, DDSD's existing recycled water facilities are underutilized. Currently sized to deliver a peak flow of 12.8 mgd, the average demand for power plants and existing irrigation users has been approximately 7 mgd with peak flows of up to 12 mgd occurring less than 10 percent of the year (DDSD, 2004). Expanded recycled water use would make use of available capacity.

In addition, DDSD recently negotiated an agreement with the local water agency, Contra Costa Water District (CCWD), to allow for the development of an additional 1,654 AF/Y of recycled water for urban landscape and golf course irrigation projects within the DDSD service area. DDSD has asked the City, through Phil Harrington, to adopt an ordinance to modify the City of Antioch Municipal Code to require purple-colored landscaping and irrigation materials on all installations. This has two purposes: 1) to indicate

the water is not intended for drinking, and 2) to readily accommodate future recycled water connection. Given the aforementioned interest in expanding recycled water use, the City and DDS D have formed a partnership to assess the full potential of the recycled water market within the City and evaluate various alternatives for expanding the existing recycled water facilities to include additional irrigation customers.

## 5.2 Wastewater Quantity, Quality, and Current Uses

The following section describes the estimated wastewater generated in the service area. The wastewater is collected and conveyed out of the service area to the DDS D's wastewater treatment plant. This section provides a description of the regional plant treatment process and current reuse in the regional area.

### 5.2.1 Wastewater Facilities

DDS D's Water Pollution Control Facility (WPCF) is a secondary treatment plant with a rated average dry weather flow (ADWF) capacity of 16.5 mgd. As shown in Figure 5-1, the major treatment processes include screening and grit removal, primary clarification, tower trickling filters, aeration in an activated sludge system, secondary clarification, and disinfection/chlorination. Treated and disinfected secondary effluent is discharged to New York Slough in the San Joaquin Delta (RMC, 1999). A portion of the effluent is diverted to the Recycled Water Facility prior to chlorination at a varying rate depending on recycled water demands.

The Recycled Water Facility at DDS D was constructed in 2000 as part of a collaborative effort between DDS D and Calpine Corporation. It is designed to treat up to 12.8 mgd of secondary effluent from the WPCF. As shown in Figure 5-2, secondary effluent is diverted upstream of the WPCF disinfection, and undergoes flocculation, clarification, sedimentation, filtration and disinfection before being distributed to recycled water users (DDS D, 2000). Effluent quality meets or exceeds the California Department of Health Services (DHS) Title 22 water quality requirements for "unrestricted" use of recycled water.

### 5.2.2 Wastewater Generation

Municipal wastewater is generated in the City from a combination of residential, commercial and industrial sources. The quantities of wastewater generated are proportional to the population and the water use in the service area. Estimates of the wastewater flows generated within the City for the present and future conditions are presented in Table 5-1 (DDS D 2004). Table 5-1 also lists the projected quantity of treated water that meets the recycled water standards and is being discharged.

**Table 5-1. Wastewater Collected in the City of Antioch and Treated, AF/Y (DWR Table 33)**

	2003	2005	2010	2015	2020	2025
Wastewater collected in service area <sup>a</sup>	8,048	9,277	9,166	10,060	11,178	12,407
Quantity that meets recycled water standard and is discharged.	0	0	0	0	0	0

Source: DDS D Conveyance System Master Plan Update - February 20, 2004.

Note: Per capita projections and water conservation based on historically recorded values (and do not reflect any new or planned water conservation measures.)

<sup>a</sup>Wastewater is only collected in service area. There is not treatment in the City's service area.

### 5.2.3 Wastewater Collection and Disposal

In 2003, the annual average flow was 14.2 mgd, of which about half comes from the City. Average annual flow is expected to approach 24 mgd by the year 2025 (HDR, 2004). These flow projections are used to estimate the timing for future expansion projects scheduled at the various pump stations, the diversion facility, and the wastewater treatment plant. Planned improvements scheduled to begin as early as 2005



include new and extended force mains, a new gravity sewer, the Ultimate Pump Station facility, new pumps, emergency facilities, and security improvements (HDR, 2004).

The wastewater influent to the WPCF is primarily domestic, with approximately eight percent of the flow contributed by industrial and commercial sources. DDSD currently has an EPA-approved Pre-treatment Program. The treated effluent water quality meets the secondary standards required by DDSD's National Pollutant Discharge Elimination System (NPDES) permit. Current and planned disposal methods and quantities are presented in Table 5-2.

**Table 5-2. Disposal of Wastewater (Non-Recycled), AF/Y (DWR Table 34)**

Method of Disposal	Treatment Level	2005	2010	2015	2020	2025
Discharged to New York Slough through the District's deep water outfall (mgd)	Secondary effluent	9.28	6.3	8.3	9.9	11.6

Source: E-mail communication with Meg Herston of DDSD – August 31, 2005.

### 5.3 Water Recycling Current Uses

Currently, there are no recycled water uses within the City. The RWF currently delivers approximately 7 mgd of recycled water on average for use at two nearby power plants, the Delta Energy Center (DEC) and Los Medanos Energy Center (LMEC) and irrigation of two parks owned by the City of Pittsburg. The power plants are located in an industrial area along the northern border of Pittsburg. DEC is located immediately adjacent to the RWF, while LMEC receives recycled water via a pipeline extending three miles from the RWF. The two parks being irrigated with recycled water are located along this route (DDSD, 2004). DDSD recently negotiated an agreement with CCWD to allow for the development of an additional 1,654 AF of recycled water for urban landscape and golf course irrigation projects located in the City of Pittsburg. Now, in partnership with the City, DDSD is exploring the potential to expand recycled water deliveries to users in Antioch. Together the City and DDSD have developed an assessment of the recycled water market within Antioch and have evaluated potential alternatives to expand recycled water use to City parks, golf courses, and other irrigation customers. These efforts are documented in the following sections. Current recycled water uses within the City are presented in Table 5-3.

**Table 5-3. Existing Recycled Water Uses (DWR Table 35a)**

Type of Use	Treatment Level	2005 ac-ft
Agriculture	--	0
Landscape	--	0
Wildlife habitat	--	0
Wetlands	--	0
Industrial	--	0
Groundwater recharge	--	0
<b>Total</b>	--	0

### 5.4 Potential and Projected Use of Reclaimed Water

Currently, no recycled water is used in the City's service area. This section presents the development and analysis of alternatives for the recycled water projects within the City.

#### 5.4.1 Potential Use for Reclaimed Water

The potential for landscape irrigation with recycle water within the City is evaluated as listed in the August 2005 Recycled Water Project Facilities Plan. This plan is still in draft form and has not yet been formally adopted. The existing irrigation reclaimed water demands identified are 1520 ac-ft/year, with future

potential being an additional 652 ac-ft/year for a total of 2,172 ac-ft/year. The potential recycled water use included parks, golf courses, highway medians, and schoolyards for landscape irrigation. This would account for approximately ten percent of the total year 2004 water demand in the combined City area.

In addition to demand from irrigation sources, the 2005 Facilities Plan found that there is a total industrial demand of 1210 ac-ft/year. This assessment is comprised of two existing GWF Power System plants (806 ac-ft/year demand) and a future peaker power plant (403 ac-ft/year demand). This accounted for approximately five percent of the total year 2004 water demand in the combined City area.

Although not evaluated as part of the 2005 Facilities Plan due to limited demands comparison to irrigation and industrial uses, other potential recycled water uses exist within the City of Antioch including: dual plumbing, car washes, and commercial laundries.

The potential recycled water demand is assumed to be constant in the future recognizing that the amount of landscaping area within the City is constant throughout the planning period. Table 5-4 shows the projected recycled water demand for the planning period.

**Table 5-4. Potential Recycled Water Demand, AF/Y (DWR Table 35b)**

Type of Use	Treatment Level	2010	2015	2020	2025
Agriculture	--	0	0	0	0
Landscape	Tertiary	2,172	2,172	2,172	2,172
Wildlife habitat	--	0	0	0	0
Wetlands	--	0	0	0	0
Industrial	Tertiary	1,210	1,210	1,210	1,210
Groundwater recharge	--	0	0	0	0
<b>Total</b>		<b>3,382</b>	<b>3,382</b>	<b>3,382</b>	<b>3,382</b>
<b>Percent of Projected Demand</b>		<b>15.1</b>	<b>14.2</b>	<b>13.4</b>	<b>13.1</b>

#### 5.4.2 Projected Future Use of Reclaimed Water

Conceptual alternatives for recycled water projects in the City of Antioch were developed based on identifying locations of larger irrigation users (or “anchor” users) within similar geographic areas in order to receive optimal benefit with respect to cost. Table 5-5 presents a summary of the alternatives developed for the Antioch/DDSD Recycled Water Master Plan. As shown in this table, alternatives were classified by:

- Recycled Water Source.** Each of the project alternatives receives recycled water from one or both of the following sources: (1) the DDSD RWF, and (2) a future satellite treatment plant in southeastern Antioch. Project alternatives served exclusively by the RWF are labeled with a “C”, denoting conventional treatment. Projects served by the future satellite treatment plant or combination of satellite treatment and the RWF are labeled with an “S”, denoting satellite treatment. The “C” alternatives serve existing users exclusively, while the “S” alternatives serve a combination of existing and future users.
- Anchor Users Served.** The project alternatives were also classified by the main irrigation users served. These users provide the major end points of the distribution system, thereby dictating the backbone pipeline alignment needed to serve them.
- Lateral Users Served.** Two project alternatives were further broken down based on the extent to which additional smaller users are served recycled water by laterals along the pipeline alignment.

**Table 5-5. Project Alternatives Summary**

Alternative	Recycled Water Source	Anchor Users	Number of Lateral Users	Demand Served (AF/Y)
<b>Conventional Alternative</b>				
C1a	RWF	Lone Tree Golf Course	8	531
C1b	RWF	Lone Tree Golf Course	15	713
C2	RWF	Lone Tree Golf Course Contra Loma Regional Park	15	818
C3	RWF	Lone Tree Golf Course Deer Valley High School	18	850
C4	RWF	Lone Tree Golf Course Contra Loma Regional Park Deer Valley High School	18	955
<b>Satellite Treatment Alternatives</b>				
S1a	RWF Satellite Treatment	Lone Tree Golf Course Sand Creek Golf Course Deer Valley High School	10	1,128
S1b	RWF Satellite Treatment	Lone Tree Golf Course Sand Creek Golf Course Deer Valley High School	20	1,364
S2	Satellite Treatment	Lone Tree Golf Course Sand Creek Golf Course Deer Valley High School	5	1,097
S3	RWF Satellite Treatment	Lone Tree Golf Course Sand Creek Golf Course Deer Valley High School FUA-2 Users	24	1,437

Although this plan is not yet formally adopted, the 2005 Facilities Plan recommended Alternative C1a. This project was selected as the most feasible alternative for the following reasons:

- **Cost Effectiveness.** Although Alternative C1a did not have the lowest unit cost of the other “C” alternatives, it did have lowest capital (\$6.7 M) and O&M costs.
- **Timing of Demand.** All of the users served are existing irrigation customers, which allows the City to capitalize on the benefits of recycled water use as soon as infrastructure is designed and constructed.
- **Users Served.** Alternative C1a serves only municipal customers within the City. This arrangement avoids any delays associated with negotiating agreements with new users or developing public outreach programs to make users more aware of recycled water.
- **Minimal Impacts.** It involves use of existing infrastructure, thereby reducing potential environmental impacts and traffic impacts relating to new construction.
- **Multiple Benefits.** It will reduce dependence on Delta water supplies, improve water supply reliability, reduce wastewater discharges, and utilize existing recycled water facilities.

Future phases of the Antioch/DDSD Recycled water project will expand upon Phase I (Alternative C1a) to maximize potential use of recycled water in the City of Antioch. Phase II (Alternative C1b) and Phase III (expansion of Phase II) target existing irrigation customers but do not yet have a schedule for implementa-

tion. Additional phases may be implemented to serve future demands from new developments. Table 5-6 presents the projected possible reuse water demands in the City's service area, based on Alternative C1a.

**Table 5-6. Projected Future Use of Recycled Water (DWR Table 36)**

Type of Use	2010	2015	2020	2025
Agriculture	0	0	0	0
Landscape	531	531	531	531
Wildlife habitat	0	0	0	0
Wetlands	0	0	0	0
Industrial	0	0	0	0
Groundwater recharge	0	0	0	0
<b>Total</b>	<b>531</b>	<b>531</b>	<b>531</b>	<b>531</b>

As Table 5-7 indicates, the City's 2000 UWMP projected no reclaimed water use, and none was provided.

**Table 5-7. Recycled Water Uses–2005 Projection Versus Actual (DWR Table 37)**

Method of Disposal	2000 Projection for 2005	2005 Actual Use
Agriculture	0	0
Landscape	0	0
Wildlife habitat	0	0
Wetlands	0	0
Industrial	0	0
Groundwater recharge	0	0
<b>Total</b>	<b>0</b>	<b>0</b>

The City does not have future plans to use financial incentives to encourage reclaimed water use. However, the City does plan on promoting reclaimed water use by means of public outreach, such as newsletters, public meetings, recycled water school curriculum development, media relations, and advertisement. As shown in Table 5-8, the projected water savings for this public outreach program have not yet been developed.

**Table 5-8. Methods to Encourage Recycled Water Uses (DWR Table 38)**

Actions	AF/Y of use projected to result from this action			
	2010	2015	2020	2025
Financial incentives	0	0	0	0
Public outreach	N/A	N/A	N/A	N/A
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

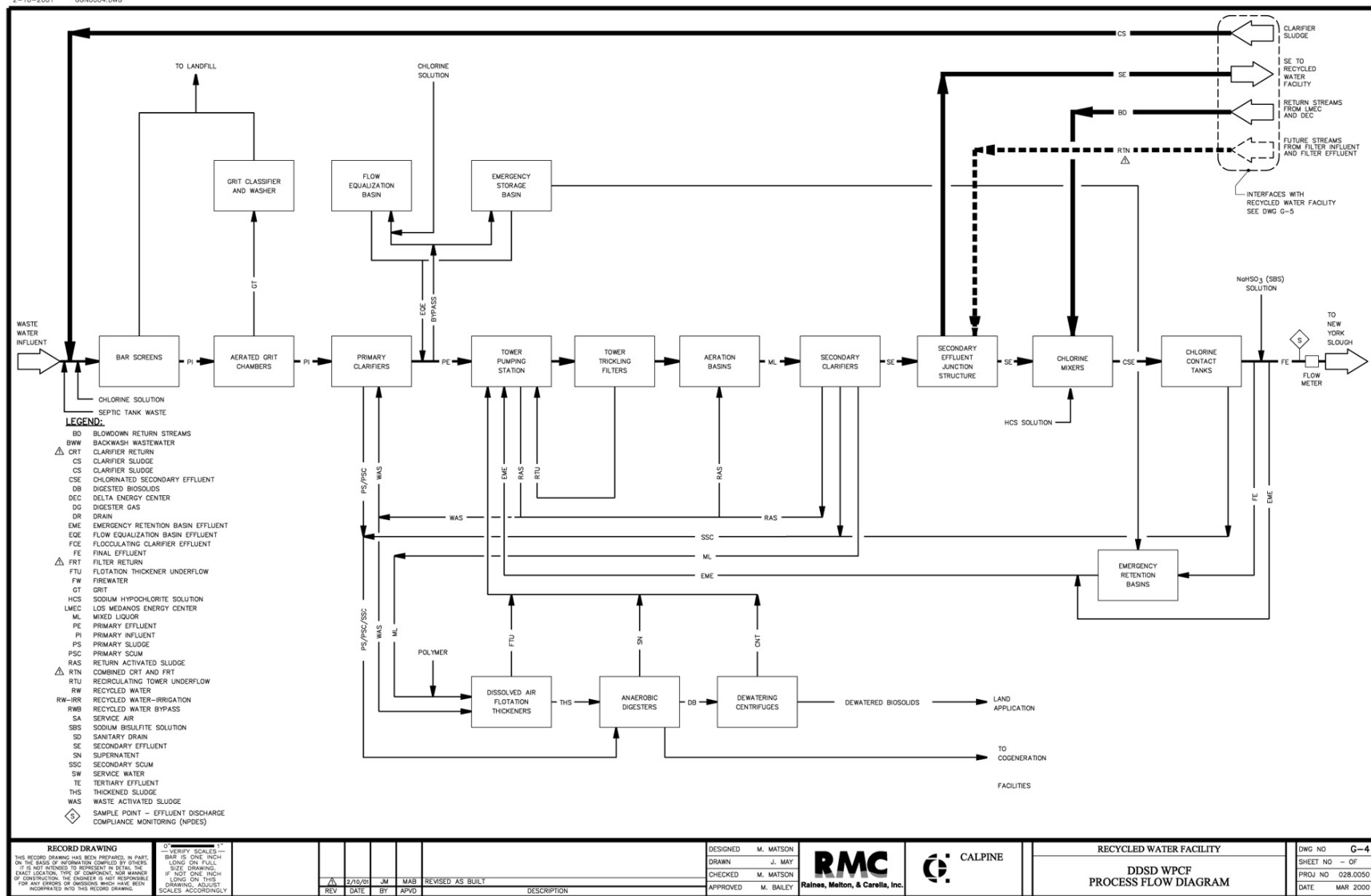


Figure 5-1. DDSS WPCF Process Flow Diagram

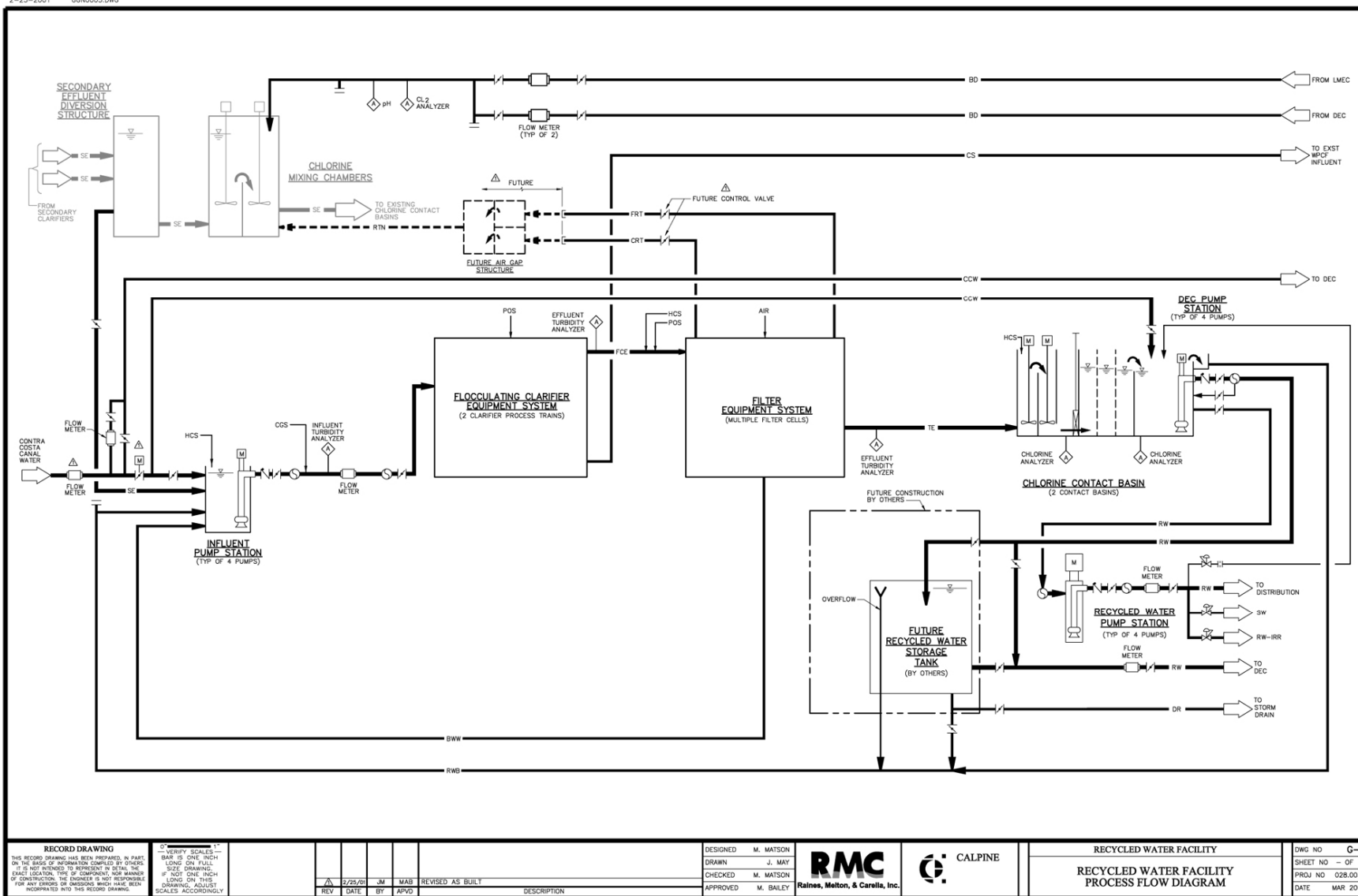


Figure 5-2. Recycled Water Facility Process Flow Diagram



## SECTION 6

### WATER CONSERVATION DEMAND MANAGEMENT MEASURES

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Water conservation is a method available to reduce water demands, thereby reducing water supply needs for the City. Water conservation implementation can also decrease costs for wastewater treatment and disposal. This section presents a description of the City's water conservation program.

The unpredictable water supply and ever increasing demand on California's complex water resources have resulted in a coordinated effort by the State of California Department of Water Resources (DWR), water utilities, environmental organizations, and other interested groups to develop a list of urban Demand Management Measures DMMs for conserving water. This consensus-building effort resulted in a Memorandum of Understanding Regarding Urban Water Conservation in California (MOU), as amended September 16, 1999, among parties, which formalizes an agreement to implement these DMMs and makes a cooperative effort to reduce the consumption of California's water resources. The DMMs as defined by the MOU are presented in Table 6-1. The DMMs as defined in the MOU are generally recognized as standard definitions of water conservation measures. The MOU is administered by the California Urban Water Conservation Council (CUWCC). The City is not currently an MOU signatory.

The MOU requires that a water utility implement only the DMMs that are economically feasible. If a DMM is not economically feasible, the utility may request an economic exemption for that DMM.

**Table 6-1. Water Conservation Demand Management Measures**

No.	DMM Name
1	Water survey programs for single-family residential and multi-family residential connections.
2	Residential plumbing retrofit.
3	System water audits, leak detection and repair.
4	Metering with commodity rates for all new connections and retrofit of existing connections.
5	Large landscape conservation programs and incentives.
6	High-efficiency washing machine rebate programs.
7	Public information programs.
8	School education programs.
9a	Conservation programs for commercial, industrial, and institutional accounts.
9b	Conservation programs for commercial, industrial, and institutional accounts.
10	Wholesale agency assistance programs.
11	Conservation pricing.
12	Conservation coordinator.
13	Water waste prohibition.
14	Residential Ultra Low Flow Toilet (ULFT) replacement programs.

## 6.1 Current Water Conservation Program

The City conducts an ongoing water conservation program. As a raw water customer of Contra Costa Water District (CCWD), all Antioch customers are eligible for conservation programs provided by CCWD. These services were not regularly marketed to Antioch customers until 2000. All DMMs are implemented by CCWD, so most expenses and savings are tracked by them. The City assists in the marketing of the programs and provides staffing assistance for some DMMs. A description of each DMM that is currently being implemented or scheduled for implementation, a schedule of implementation, and a method to evaluate effectiveness is provided in this section. The existing conservation savings are also discussed.

### 6.1.1 DMM 1—Water survey programs for single-family residential and multi-family residential connections

**Description:** Water survey programs for single and multi-family residential connections were implemented in 2000. The Single-Family (SF) Residential Survey Program offers free on-site evaluations of home water use. The survey takes between one to two hours to complete, and includes a thorough review of both interior and landscape water uses; however, the primary focus of the survey is landscape water use. The surveyor inspects each irrigation station, and notes specific problems and suggested repairs or improvements. Precipitation tests are conducted on individual sprinkler stations, and a site-specific monthly irrigation schedule is prepared. The schedule is programmed into the controller and the customer is taught how to adjust the timer. After participating in the program, customers are sent four (4) post cards each year to remind them to adjust their watering schedules and to check their irrigation systems. The Multi-Family (MF) Residential Survey Program targets apartment complexes and other multi-family customers. The program is marketed to the highest water-using customers and is implemented in conjunction with the MF ULFT Replacement Program. During the survey, plumbing fixtures are flow tested and high-efficiency fixtures are installed or provided to replace high-volume fixtures, such as showerheads, faucet aerators and toilet flappers. A report is provided to the customer, which lists the number and location of leaks found, an inventory of toilets by flush volume, and a list of showerheads, aerators or flappers installed. The customer is also provided information about other CCWD programs, such as the ULFT Distribution Program, Large Landscape Survey Program and Commercial Clothes Washer Program.

**Schedule:** The implementation of this DMM is ongoing. The program started in year 2000.

**Evaluation of DMM Effectiveness:** This program is implemented by CCWD; the City is responsible for marketing and conducts some of the single family surveys. Marketing costs and City staff time for this program are not separately tracked but instead, are included in the conservation coordinator expenditures (DMM 12). Expenditures, other than marketing costs, accrued by CCWD are provided in Table 6-2. The tabulated expenditures consist of the total cost of CCWD's implementation and not the costs related specifically to implementation within the City (Table 6-2). The number of surveys conducted in Antioch from 2001 to 2005 for single-family and multi-family units, is shown in Table 6-2.

**Table 6-2. Actual Conservation Activities, Expenditures, and Water Savings (DMM 1)**

Year	2001*	2002*	2003*	2004*	2005*
Single family surveys	5	64	91	94	82
Multi family surveys	153	385	43	660	113
Expenditures <sup>a</sup> , dollars	N/A	N/A	154,573	145,307	N/A
Water savings, ac-ft/yr	2	7	10	19	21

<sup>a</sup>Source: CCWD Retail DMM Report, 2003 and CCWD Retail DMM Report, 2004.

\*Data recorded for fiscal year from July 1 to June 30.

### 6.1.2 DMM 2—Residential plumbing retrofit

**Description:** Plumbing retrofit of existing residential accounts consists of providing low flow showerheads, faucet aerators, and toilet leak detection tablets to customers. There is not an enforceable ordinance in effect in the service area requiring the replacement of high-flow showerheads and other water use fixtures with their low-flow counterparts. The 75 percent saturation requirement for single-family and multi-family housing units has not yet been satisfied. From 2001 to 2005, approximately 79 and 284 low flow showerheads were installed or distributed to single-family and multi-family units, respectively. It is estimated that the percent of single-family units with low flow showerheads is 32, while 41 percent of multi-family housing units possess low flow showerheads. CCWD, not the City, tracks the distribution and cost of low-flow devices using MS Access.

The City markets the retrofit program in conjunction with the residential survey program. Marketing letters are sent out in batches by meter reading routes. Neighborhoods are selected to receive the marketing letters if there is a history of over irrigation in the neighborhood or if participation in the retrofit program needs to be increased; routes with pre-1992 homes are targeted. Marketing letters are sent out to all households in the selected route that have a monthly consumption of over 750 gpd or 30 units or more per month. This has been effective in targeting the City's larger consumers where the most water can be conserved. Marketing efforts are tracked so that each route is marketed at least once every two to three years. Routes where there are problems with over consumption are sent letters every one to two years. The City currently realizes close to a five percent response rate to marketing letters on average since 2001.

**Schedule:** The implementation of this DMM is ongoing. The program started in 1991.

**Evaluation of DMM Effectiveness:** This program is implemented by CCWD; the City is only responsible for marketing. Marketing costs for this program are not separately tracked but instead, are included in the conservation coordinator expenditures (DMM 12). Program expenditures, other than marketing, accrued by CCWD are included in DMM 1 expenditure data (Table 6-2). There are an estimated 18,621 pre-1992 single-family accounts and 3,787 pre-1992 multi-family accounts. The number of devices distributed, which includes showerheads, faucet aerators and flappers, are provided in Table 6-3.

**Table 6-3. Actual Conservation Activities, Expenditures, and Water Savings (DMM 2)**

Year	2001*	2002*	2003*	2004*	2005*
Single-family devices	2	N/A	69	56	61
Multi-family devices	31	N/A	79	975	122
Expenditures, dollars	N/A	N/A	N/A	N/A	N/A
Water savings, ac-ft/yr	0.5	0.5	2.6	17.2	19.4

\*Data recorded for fiscal year from July 1 to June 30.

### 6.1.3 DMM 3—System water audits, leak detection and repair

**Description:** Because its unaccounted-for water percentage is so low (see Section 3.2.1) the City has no ongoing program for leak detection. Through City staff investigations, when leaks are found, repairs are made (Phil Barlow, personal communication, November 2005.)

The City also has an ongoing water main replacement program. On a yearly basis it budgets for removing and replacing older mains and valves. This activity helps substantially to reduce leakage potential.

**Schedule:** Leaks repaired when found.

**Evaluation of DMM Effectiveness:** Expenditures for leak repair is included in the overall Operations and Maintenance Budget (Table 6-4).

**Table 6-4. Actual Conservation Activities, Expenditures and Water Savings (DMM 3)**

Year	2001*	2002*	2003*	2004*	2005*
Percent unaccounted-for water	N/A	N/A	N/A	N/A	N/A
Miles of distribution lines survey <sup>a</sup>	N/A	N/A	N/A	N/A	N/A
Miles of distribution lines repaired	N/A	N/A	N/A	N/A	N/A
Expenditures <sup>a</sup> , dollars	N/A	N/A	N/A	N/A	N/A
Water savings, ac-ft/yr	N/A	N/A	N/A	N/A	N/A

\*Source: CCWD Retail DMM Report, 2003 and CCWD Retail DMM Report, 2004.

\*Data recorded for fiscal year from July 1 to June 30.

#### 6.1.4 DMM 4—Metering with commodity rates for all new connections and retrofit of existing connections

**Description:** The City has fully implemented this program. Meters are required by the City for all new connections and are billed by volume-of-use. There are no unmetered accounts. The City has not conducted a feasibility study to assess the merits of a program to provide incentives to switch mixed-use accounts to dedicated landscape meters. The number of CII accounts with mixed-use meters and the number of CII accounts with mixed-use meters retrofitted with dedicated irrigation meters has not been tracked by the City and, therefore, is not available.

**Schedule:** This program has been fully implemented.

**Evaluation of DMM Effectiveness:** There are no unmetered accounts in existence from 2001 to 2005 (Table 6-5). An estimate of water saved as a result of meter retrofits, the number of accounts without commodity rates, and expenditures to-date are not available.

**Table 6-5. Actual Conservation Activities, Expenditures, and Water Savings (DMM 4)**

Year	2001	2002	2003	2004	2005 (projected)
Unmetered accounts	0	0	0	0	0
Retrofit meters installed	N/A	N/A	N/A	N/A	N/A
Accounts without commodity rates	N/A	N/A	N/A	N/A	N/A
Expenditures, dollars	N/A	N/A	N/A	N/A	N/A
Water savings, ac-ft/yr	N/A	N/A	N/A	N/A	N/A

#### 6.1.5 DMM 5—Large landscape conservation programs and incentives

**Description:** The Landscape Water Budget Program is directed at those commercial and multi-family sites with dedicated irrigation water accounts. Water budgets are prepared using real-time local evapotranspiration (eTo) data and actual landscape area measurements obtained through an aerial photo. The data is integrated into a detailed water budget equation, which integrates monthly landscape coefficients, irrigation efficiency, and real-time eTo. Water budget site reports are prepared comparing the water budget to actual water use. The program provides participating customers with water budget site reports tailored specifically to their properties. These reports enable the customer to adjust their water use to reflect seasonal weather changes and, therefore, control the costs of their water bills. This program is implemented by CCWD; the city is only responsible for marketing. Marketing costs for this program are not separately tracked but instead, are included in the conservation coordinator expenditures (DMM 12). Currently, the City does not provide water

use notices to accounts with budgets each billing cycle nor has it developed a marketing/targeting strategy for landscape surveys. Elements of the current Landscape Surveys are as follows:

- Irrigation system check
- Distribution uniformity analysis
- Review/develop irrigation schedules
- Measure landscape area
- Measure total irrigable area
- Provide customer report/information
- CCWD also tracks survey offers and results as well as provides follow-up surveys for previously completed surveys.

**Schedule:** The implementation of this DMM is ongoing. The program started in 2003.

**Evaluation of DMM Effectiveness:** This program is implemented by CCWD; program expenditures accrued by CCWD are provided in Table 6-6. The tabulated expenditures consist of the total cost of CCWD's implementation and not the costs related specifically to implementation within the City. This information, as well as the number of landscape audits completed, is provided in Tables 6-6.

**Table 6-6. Actual Conservation Activities, Expenditures, and Water Savings (DMM 5)**

Year	2001*	2002*	2003*	2004*	2005*
Budgets developed	N/A	N/A	N/A	N/A	N/A
Landscape audits completed	N/A	3	3	0	3
Follow-up visits	N/A	N/A	N/A	N/A	N/A
Expenditures <sup>a</sup> , dollars	N/A	N/A	113,507	104,104	N/A
Water savings, ac-ft/yr	N/A	3.2	4.9	4.9	8.1

<sup>a</sup>Source: CCWD Retail DMM Report, 2003 and CCWD Retail DMM Report, 2004.

\*Data recorded for fiscal year from July 1 to June 30.

### 6.1.6 DMM 6—High-efficiency washing machine rebate programs

**Description:** This program is implemented by CCWD. CCWD, in coordination with six other water agencies, implemented a Bay Area Regional Clothes Washer Rebate Program. CCWD's program has offered rebates from \$50 to \$100 to residential customers who purchase clothes washers with a minimum water use efficiency, or water factor. The program is marketed primarily through the retail appliance stores. In addition, CCWD markets the program through the City of Antioch newsletter, *Citygram*, the Single Family Survey Program, and through newspaper advertisements.

PG&E also offers rebates of \$35 and \$75 for high-efficiency washers. To qualify for these rebates the water heater must be heated by natural gas distributed to the installation address by PG&E or electricity distributed to the installation address by PG&E. Water heaters that use propane do not qualify. For a \$35 rebate (Level 1), the clothes washer must have a Modified Energy Factor (MEF) of 1.42-1.59 and a Water Factor (WF) of 9.5 or lower. For a \$75 rebate (Level 2), the clothes washer must have a MEF of 1.60 or greater and a WF of 8.5 or lower (PG&E, 2005).

**Schedule:** The implementation of this DMM is ongoing. The program started in 2000.

**Evaluation of DMM Effectiveness:** This program is implemented by CCWD; program expenditures accrued by CCWD are provided in Table 6-7. The tabulated expenditures consist of the total cost of

CCWD's implementation and not the costs related specifically to implementation within the City. The number of rebates and amount of the rebate are provided in Tables 6-7.

**Table 6-7. Actual Conservation Activities, Expenditures, and Water Savings (DMM 6)**

Year	2001*	2002*	2003*	2004*	2005*
Dollars per rebate	\$50/100	\$50/100	\$50/100	\$50/100	\$50/100
Rebates paid	108	259	440	30	371
Expenditures <sup>a</sup> , dollars	N/A	N/A	109,965	73,692	N/A
Water savings, ac-ft/yr	1.7	5.7	12.6	13.1	18.9

\*Source: CCWD Retail BMP Report, 2003 and CCWD Retail BMP Report, 2004.

### 6.1.7 DMM 7—Public information programs

**Description:** Public information is an ongoing component of the City's water conservation program. Activities incorporated in this program include bills inserts, newsletters, and brochures, participation in media events, and speaker's bureau. In addition, the City is a participating agency in the Contra Costa County Green Business Program. The Green Business Program is a partnership of environmental agencies, professional associations, waste management agencies, and utilities, working together to recognize and assist businesses and government agencies that operate in an environmentally friendly manner.

**Schedule:** The implementation of this DMM is ongoing. The City has been doing conservation outreach, on some level, for a very long time and the official start date is not documented.

**Evaluation of DMM Effectiveness:** Savings from this program cannot be directly quantified. Most of the expenditures for this program are not separately tracked but instead, are included in the conservation coordinator expenditures (DMM 12). The activities performed in this program as well as expenditures to-date and projected are provided in Tables 6-8.

**Table 6-8. Actual Conservation Activities and Expenditures (DMM 7)**

Year	2001	2002	2003	2004	2005 (projected)
Bill inserts/newsletters/brochures	N/A	N/A	N/A	N/A	N/A
Speaker events, media events, dollars	N/A	N/A	N/A	N/A	200
Speaker's bureau	N/A	N/A	N/A	N/A	N/A
Program to coordinate with other government agencies, industry, and public interest groups and media	N/A	N/A	N/A	N/A	N/A
Expenditures, dollars	N/A	N/A	N/A	N/A	200

### 6.1.8 DMM 8—School education programs

**Description:** The City makes the Water Treatment Plant (WTP) available for Antioch schools to come out and tour the facility as an educational fieldtrip. These tours involve an age-appropriate guided tour of the water treatment plant. Students receive booklets and conservation material when they visit the plant. This program has primarily been used by 3<sup>rd</sup> grade classes.

**Schedule:** This is an ongoing program.

**Evaluation of DMM Effectiveness:** As with most education programs, the direct effectiveness of our fieldtrips is difficult to quantify. The program is well received by the students and the teachers that have come out continue to schedule for years to come.



**Table 6-9 Actual Conservation Activities and Expenditures (DMM 8)**

Year	2001	2002	2003	2004	2005 (projected)
Grades K-3rd	6	8	8	0	8
Grades 4 <sup>th</sup> -6th	N/A	N/A	N/A	N/A	N/A
Grades 7 <sup>th</sup> -8th	N/A	N/A	N/A	N/A	N/A
High School	N/A	N/A	N/A	N/A	N/A
Expenditures, dollars	600	800	800	N/A	800

### 6.1.9 DMM 9a—Conservation programs for commercial, industrial, and institutional accounts

**Description:** This program is implemented by CCWD; the city is only responsible for marketing. Marketing costs for this program are not separately tracked but instead, are included in the conservation coordinator expenditures (DMM 12). The CII survey program targets a variety of commercial, institutional and industrial customers. Individual water-using devices are inspected, and customers receive a report listing improvements that can be made to the equipment and to the maintenance of that equipment. Rebates are offered as an incentive to upgrade to more efficient equipment.

**Schedule:** The implementation of this DMM is ongoing. The program started in 2004.

**Evaluation of DMM Effectiveness:** This program is implemented by CCWD; program expenditures accrued by CCWD are provided in Table 6-10. The tabulated expenditures consist of the total cost of CCWD's implementation and not the costs related specifically to implementation within the City. CCWD does not track CII program interventions and water savings. The activities performed in this program are provided in Tables 6-10.

**Table 6-10. Actual Conservation Activities, Expenditures, and Water Savings (DMM 9)**

Year	2001*	2002*	2003*	2004*	2005*
On-site surveys completed	N/A	N/A	N/A	25	12
Rebates provided	N/A	N/A	N/A	36	0
Follow-up visits	N/A	N/A	N/A	N/A	N/A
Expenditures <sup>a</sup> , dollars	N/A	N/A	84,382	118,653	N/A
Water savings, ac-ft/yr	N/A	N/A	N/A	22.6	36.8

\*Source: CCWD Retail DMM Report, 2003 and CCWD Retail DMM Report, 2004

\*Data recorded for fiscal year from July 1 to June 30.

### 6.1.10 DMM 9b—Conservation programs for commercial, industrial, and institutional accounts

**Description:** In addition to the existing survey program, CCWD provides CII ULFT replacement. The program targets various commercial and institutional customers through various means: direct mail, bill inserts, bill message, newsletter, telephone, website, trade publications, trade shows, or through the CII Survey Program. The most effective form of marketing was found to be direct mailing. However, bill insets and bill messages were inexpensive and resulted in modest participation. Customers are targeted based on consumption ranking, potential savings, oldest meter, CII sector or subsector, and CII ULFT study subsector targeting. Repeated targeting seems to be the most effective method. CCWD keeps and maintains customer participant information and is willing to share this information for use in a CUWCC study. Customers are offered a rebate of 100% of the material cost up to \$150 per ULFT. In addition, CCWD negotiated with

local plumbing wholesalers to offer select high quality toilets at wholesale prices to any participant. This assures that toilets installed will have long-term savings and customer satisfaction.

**Schedule:** The implementation of this DMM is ongoing. The program started in 2000.

**Evaluation of DMM Effectiveness:** This program is implemented by CCWD; program expenditures accrued by CCWD are provided in Table 6-11. The tabulated expenditures consist of the total cost of CCWD's implementation and not the costs related specifically to implementation within the City. The activities performed in this program are provided in Tables 6-11.

**Table 6-11. ULFT Replacement Activities, Expenditures and Water Savings (DMM 9)**

	2001*	2002*	2003*	2004*	2005*
# of commercial replacements	0	0	11	11	129
# of industrial replacements	0	0	0	0	0
# of institutional replacements	0	0	4	25	3
Actual expenditures <sup>a</sup> - dollars	0	0	282,353	50,839	N/A
Actual water savings - AF/Y	0	0	0.6	1.8	6.0

<sup>a</sup>Source: CCWD Retail BMP Report, 2003 and CCWD Retail BMP Report, 2004.

\*Data recorded for fiscal year from July 1 to June 30.

#### 6.1.11 DMM 10—Wholesale agency assistance programs

This DMM is not applicable to the City because the City is not a wholesale agency.

#### 6.1.12 DMM 11—Conservation pricing

**Description:** The City's price rate structure includes a monthly service charge and a charge per 100 cubic feet of water use. The City does not divide rates by account type. Rather, the monthly service charge is based on water line size and the quantity charge is based on zone.

**Schedule:** N/A

**Evaluation of DMM Effectiveness:** The City currently does not measure the effectiveness of the rates schedule. This conservation program is in its initial stages and the results have not been fully realized.

**Table 6-12. Description of District Rate Structures (DMM 11)**

Account Type	Define
Residential	Zone 1 - \$1.73/100 cfs
Water rate structure	5/8" – 1" - \$7.85 – 7.95
Year rate effective	2003
Commercial	Zone 1 - \$1.73/100 cfs
Water rate structure	5/8" – 1" - \$7.85 – 7.95
Year rate effective	2003
Industrial	Zone 1 - \$1.73/100 cfs
Water rate structure	5/8" – 1" - \$7.85 – 7.95
Year rate effective	2003
Institutional	Zone 1 - \$1.73/100 cfs
Water rate structure	5/8" – 1" - \$7.85 – 7.95
Year rate effective	2003
Irrigation (dedicated meter)	Zone 1 - \$1.73/100 cfs
Water rate structure	5/8" – 1" - \$7.85 – 7.95
Year rate effective	2003

### 6.1.13 DMM 12—Conservation coordinator

**Description:** The conservation coordinator is an ongoing component of the City's water conservation program. The conservation coordinator is responsible for implementing and monitoring the City's water conservation activities. A conservation coordinator has been in place since July of 2000. The position title is Environmental Resource Coordinator. The Environmental Resource Coordinator is Julie Haas-Wajdowicz, who is a full time staff person but only devotes 1/3 of her time to water conservation. Regional conservation work is done through a partnership with CCWD. There is no additional staff provided by the City, however some leak checking and initial outreach is done by meter readers and other field workers, and customer service representatives often provide conservation and leak detection advice to customers. Conservation coordinator and staff information including historical annual expenditures is provided in Tables 6-13.

**Schedule:** The implementation of this DMM is ongoing. The program started in 2000.

**Evaluation of DMM Effectiveness:** Water savings from this DMM cannot be directly quantified. Effectiveness of this DMM will be evaluated by the success of the District's water conservation program.

**Table 6-13. Actual Conservation Activities and Expenditures (DMM 12)**

Year	2001	2002	2003	2004	2005 (projected)
Full-time positions	0	0	0	0	0
Part-time staff	1	1	1	1	1
Position supplied by other agency	N/A	N/A	N/A	N/A	N/A
Expenditures, dollars	20,000	21,000	45,000	45,000	50,000

### 6.1.14 DMM 13—Water waste prohibition

**Description:** Water waste prohibition is an ongoing component of the City’s water conservation program. This City has adopted a water waste prohibition ordinance. The City’s most current water waste ordinance is as follows:

#### Antioch Municipal Code

##### § 6-5.10 WASTE OF WATER.

No person shall misuse or waste water. Any person misusing or wasting water shall be guilty of an infraction. The term **MISUSE** or **WASTE** shall mean the use of water which, to a reasonable person, is clearly in excess of the need or intended purpose. **MISUSE** or **WASTE** may also mean the use of water in excess of quantity standards imposed during any water shortage emergency declared by the City Council. In the event of any misuse or waste of water, in addition to criminal prosecution, the Finance Department may install flow restrictors at the premises where misuse or waste has occurred, following procedures established for such installation, which shall include at least one warning notice to the consumer prior to such installation. (‘66 Code, § 6-5.10) (Ord. 76-A, passed 12-17-23; Am. Ord. 817-C-S, passed 7-11-91) [Penalty, see § 6-5.33](#)

The majority of the cases of water wasting involve over irrigation. All violators are referred to CCWD to take advantage of their water conservation programs and assistance. Enforcement is carried out by the City’s Neighborhood Improvement Officers. To date, citations have not been issued for water wasting violations, as compliance is typically reached with courtesy notices and abatement letters. On-site visits noted in Table 6-14 below are verified cases created in the City’s code violation tracking database. This is an under reporting of the efforts as most instances do not reach the code enforcement level of involvement. Currently, the City does not include water softener checks in the home water survey nor does it include information about Demand Initiated Regenerating and exchange-type water softeners in education efforts.

A summary of the program including annual expenditures in the past is provided in Tables 6-14.

**Schedule:** The implementation of this DMM is ongoing.

**Evaluation of DMM Effectiveness:** Water savings from this program cannot be directly quantified.

**Table 6-14. Actual Conservation Activities and Expenditures (DMM 13)**

Year	2001	2002	2003	2004	2005 (projected)
Waste ordinance in effect	Yes	Yes	Yes	Yes	Yes
On-site visits	6	1	N/A	5	5
Water softener ordinance	N/A	N/A	N/A	N/A	N/A
Expenditures, dollars	N/A	N/A	N/A	N/A	N/A

### 6.1.15 DMM 14—Residential ULFT replacement programs

**Description:** This program is implemented by CCWD; the City assists in the marketing of the program. Marketing costs for this program are not separately tracked but instead, are included in the conservation coordinator expenditures (DMM 12). CCWD offers both single-family and multi-family residential customers with Ultra Low Flow toilets (ULFTs). The program is marketed directly to customers with homes built prior to 1992 through the survey programs. The program is also marketed through articles in the City’s newsletter, *The Citygram*, which is distributed in the water bills. Eligible customers receive a voucher and pick up their new ULFT at a specific vendor who contracts with CCWD. Customers are responsible for installa-

tion and CCWD conducts random inspections to insure proper installation. Multi-family customers who replace more than six toilets receive free delivery. The Multi-family program is marketed at least one time each year to a Property Managers Group that meets monthly with the Police Department and Neighborhood Improvement Services staff. Prior to the ULFT Distribution Program, CCWD offered rebates to single-family customers as an incentive to install ULFTs.

**Schedule:** The implementation of this DMM is ongoing. The program started in 1994.

**Evaluation of DMM Effectiveness:** This program is implemented by CCWD; program expenditures accrued by CCWD for both the single and multi-family programs are provided in Table 6-15 and Table 6-16. The tabulated expenditures consist of the total cost of CCWD's implementation and not the costs related specifically to implementation within the City. The number of ULFT rebates and installs performed in the City of Antioch for single and multi-family units are provided in Tables 6-15 and 6-16, respectively.

**Table 6-15. Actual Conservation Activities and Expenditures (DMM 14 Single-Family)**

Table N1-Actual	2001*	2002*	2003*	2004*	2005*
# of ULF rebates	53	80	N/A	0	N/A
# of ULF direct installs	53	80	101	261	334
# of ULF CBO installs	N/A	N/A	N/A	N/A	N/A
Actual expenditures <sup>a</sup> - dollars	N/A	N/A	124,703	22,167	N/A
Actual water savings -AF/Y	2.6	6.6	11.6	24.6	41.2

<sup>a</sup>Source: CCWD Retail BMP Report, 2003 and CCWD Retail BMP Report, 2004.

\*Data recorded for fiscal year from July 1 to June 30.

**Table 6-16. Actual Conservation Activities and Expenditures (DMM 14 Multi-Family)**

Table N2-Actual	2001*	2002*	2003*	2004*	2005*
# of ULF rebates	N/A	N/A	N/A	0	N/A
# of ULF direct installs	28	75	190	343	72
# of ULF CBO installs	N/A	N/A	N/A	N/A	N/A
Actual expenditures - dollars	N/A	N/A	N/A	N/A	N/A
Actual water savings - AF/Y	1.5	5.3	15.2	33.0	36.7

\*Data recorded for fiscal year from July 1 to June 30.

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## SECTION 7

### WATER SUPPLY VERSUS DEMAND COMPARISON

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This section presents a comparison of existing and future water supply versus demand. The comparison is based on the water demand projections developed in Section 3 and the water supply volumes determined and projected in Section 4. The comparison considers the projected normal water year demands versus the projected normal water year supplies. Consideration was also given to water demand and supply conditions for a single dry water year and multiple dry water years.

#### 7.1 Current and Projected Water Supplies vs. Demand

Tables 7-1, 7-2 and 7-3 summarize and compare the projected annual water supply and demand for normal water supply years. The City of Antioch (City) will have adequate capacity during normal years through the year 2025. Note that this comparison does not account for water saved as DMMs participation is increased. Increased participation in DMMs, could cause demand to decrease in the future.

**Table 7-1. Projected Normal Water Supply, AF/Y (DWR Table 40)**

	2010	2015	2020	2025
Supply	49,140	49,140	49,140	49,140
Percent of year 2004	101.1	101.1	101.1	101.1

**Table 7-2. Projected Normal Water Demand, AF/Y (DWR Table 41)**

	2010	2015	2020	2025
Demand	22,371	23,770	25,170	25,822
Percent of year 2004	102	109	115	118

**Table 7-3. Projected Supply and Demand Comparison (DWR Table 42)**

	2010	2015	2020	2025
Supply totals	49,140	49,140	49,140	49,140
Demand totals	22,371	23,770	25,170	25,822
Difference	26,769	25,370	23,970	23,318
Difference as percent of supply	54	52	49	47
Difference as percent of demand	120	107	95	90

#### 7.2 Water Shortage Expectations

Tables 7-4 through 7-18 summarize the projected water supply and demand for normal, single dry, and multiple dry water years based on the assumptions about water reliability described in Section 4. These tables show that the City will have an adequate water supply during normal years, single dry years, and multiple dry water years through the year 2025. However, the City will advocate conservation and request or require cutbacks in the second and third dry water years of 10 and 15 percent respectively. These reductions recognize that the City's water demand associated with growth will continue to occur during multiple dry years.

**Table 7-4. Projected Single Dry Year Water Supply, AF/Y (DWR Table 43)**

	2010	2015	2020	2025
Supply	49,140	49,140	49,140	49,140
Percent of projected normal	100.0	100.0	100.0	100.0

**Table 7-5. Projected Single Dry Year Water Demand, AF/Y (DWR Table 44)**

	2010	2015	2020	2025
Demand	22,371	23,770	25,170	25,822
Percent of projected normal	100.0	100.0	100.0	100.0

**Table 7-6. Projected Single Dry Year Water Demand, AF/Y (DWR Table 45)**

	2010	2015	2020	2025
Supply totals	49,140	49,140	49,140	49,140
Demand totals	22,371	23,770	25,170	25,822
Difference	26,769	25,370	23,970	23,318
Difference as percent of supply	54.5	51.6	48.8	47.5
Difference as percent of demand	119.7	106.7	95.2	90.3

**Table 7-7. Projected Supply During Multiple Dry Year Period Ending in 2010, AF/Y (DWR Table 46)**

	2006	2007	2008	2009	2010
Supply	49,140	37,560	35,540	35,530	31,510
Percent of projected normal	100.0	76.4	72.3	68.2	64.1

**Table 7-8. Projected Demand Multiple Dry Year Period Ending in 2010, AF/Y (DWR Table 47)**

	2006	2007	2008	2009	2010
Demand	22,287	20,077	18,980	18,998	19,015
Percent of projected normal	101.9	91.8	86.8	86.9	87.0

**Table 7-9. Projected Supply and Demand Comparison During Multiple Dry Year Period Ending in 2010, AF/Y (DWR Table 48)**

	2006	2007	2008	2009	2010
Supply totals	49,140	37,560	35,540	33,530	31,510
Demand totals	22,287	20,077	18,980	18,998	19,015
Difference	26,853	17,483	16,560	14,532	12,495
Difference as percent of supply	54.6	46.5	46.6	43.3	39.7
Difference as percent of demand	120.5	87.1	87.2	76.5	65.7

**Table 7-10. Projected Supply During Multiple Dry Year Period Ending 2015, AF/Y (DWR Table 49)**

	2011	2012	2013	2014	2015
Supply	49,140	37,560	35,540	35,530	31,510
Percent of projected normal	100.0	76.4	72.3	68.2	64.1

**Table 7-11. Projected Demand Multiple Dry Year Period Ending in 2015, AF Year (DWR Table 50)**

	2011	2012	2013	2014	2015
Demand	22,651	20,638	19,729	19,967	20,205
Percent of projected normal	100.0	91.1	87.1	88.2	89.2

**Table 7-12. Projected Supply and Demand Comparison During Multiple Dry Year Period Ending in 2015, AF/Y (DWR Table 51)**

	2011	2012	2013	2014	2015
Supply totals	49,140	37,560	35,540	33,530	31,510
Demand totals	22,651	20,638	19,729	19,967	20,205
Difference	26,489	16,922	15,811	13,563	11,305
Difference as percent of supply	53.9	45.1	44.5	40.4	35.9
Difference as percent of demand	116.9	82.0	80.1	67.9	55.9

**Table 7-13. Projected Supply During Multiple Dry Year Period Ending in 2020, AF/Y (DWR Table 52)**

	2016	2017	2018	2019	2020
Supply	49,140	37,560	35,540	33,530	31,510
Percent of projected normal	100.0	76.4	72.3	68.2	64.1

**Table 7-14. Projected Demand Multiple Dry Year Period Ending in 2020, AF Year (DWR Table 53)**

	2016	2017	2018	2019	2020
Demand	24,050	21,897	20,919	21,157	21,395
Percent of projected normal	100.0	91.0	87.0	88.0	89.0

**Table 7-15. Projected Supply and Demand Comparison During Multiple Dry Year Period Ending in 2020, AF/Y (DWR Table 54)**

	2016	2017	2018	2019	2020
Supply totals	49,140	37,560	35,540	33,530	31,510
Demand totals	24,050	21,897	20,919	21,157	21,395
Difference	25,090	15,663	14,622	12,374	10,116
Difference as percent of supply	51.1	41.7	41.1	36.9	32.1
Difference as percent of demand	104.3	71.5	69.9	58.5	47.3

**Table 7-16. Projected Supply During Multiple Dry Year Period Ending in 2025, AF/Y (DWR Table 55)**

	2021	2022	2023	2024	2025
Supply	49,140	37,560	35,540	33,530	31,510
Percent of projected normal	100.05	76.4	72.3	68.2	64.1

**Table 7-17. Projected Demand Multiple Dry Year Period Ending in 2025, AF/Y (DWR Table 56)**

	2021	2022	2023	2024	2025
Demand	25,300	22,887	21,726	21,837	21,947
Percent of projected normal	100.0	90.5	85.9	86.3	86.7

**Table 7-18. Projected Supply and Demand Comparison During Multiple Dry Year Period Ending in 2025, AF/Y (DWR Table 57)**

	2021	2022	2023	2024	2025
Supply totals	49,140	37,560	35,540	33,530	31,510
Demand totals	25,300	22,887	21,726	21,837	21,947
Difference	23,840	14,673	13,814	11,694	9,563
Difference as percent of supply	48.5	39.1	38.9	34.9	30.3
Difference as percent of demand	94.2	64.1	63.6	53.6	43.6

### 7.3 Conclusions on Supply Reliability and Demand

Based on available supplies and reasonable levels of local water conservation, the City should have adequate supply to meet normal, single and multiple dry years. For conservation during a drought, the following measures will be taken:

- During the second year of multiple dry years, voluntary/mandatory reductions in demand will be 10 percent.
- During the third year of multiple dry years, voluntary/mandatory reductions in demand will be 15 percent.

The above conclusions do not account for the full implementation of DMMs. There are five DMMs that have a B/C ratio greater than or equal to one. If these DMMs are fully implemented, demand could be even lower than that projected above.

## SECTION 8

### RECOMMENDATIONS

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The City of Antioch (City) currently uses surface water from the San Joaquin River and Contra Costa Water District (CCWD) as its water supply sources. Specific water supply recommendations are given below.

- Continue to use surface water 1) pumped from the San Joaquin River and 2) purchased from CCWD as the primary sources of supply.
- Investigate the capital costs to implement a reclaimed water program.
- Continue to implement water conservation Demand Management Measures (formally Best Management Practices) in accordance with the Memorandum of Understanding (MOU).

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## **Appendix A**

### **List of Abbreviations**

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## APPENDIX A

### LIST OF ABBREVIATIONS

ABAG	Association of Bay Area Governments
ac-ft, AF	acre-feet
ac-ft/yr, AF/Y, AFY	acre-feet per year
Act	Urban Water Management Act
ADWF	average dry weather flow
BMPs	Best Management Practices
BPS	Booster pump station
Bureau	United States Bureau of Reclamation
Canal	Contra Costa Canal
CCWD	Contra Costa Water Department
CDHS	California Department of Health Services
City	City of Antioch
CUWCC	California Urban Water Conservation Council
DDSD	Delta Diablo Sanitation District
DEC	Delta Energy Center
DHS	California Department of Health Services
DMM	Demand Management Measure
DWR	California Department of Water Resources
EPA	U.S. Environmental Protection Agency
Eto	evapotranspiration
gpd, gal/d	gallons per day
gpm	gallons per minute
LMEC	Los Medanos Energy Center
MEF	Modified Energy Factor
MF	Multi-Family
mg	million gallons
mg/l	Milligrams per liter
µg/l	micrograms per liter
mgd	million gallons per day
MOU	Memorandum of Understanding Regarding Urban Water Conservation in California
NPDES	National Pollutant Discharge Elimination System
Plan, UWMP	Urban Water Management Plan
PRV	pressure reducing valve
psig	pounds per square inch gage
RBP	Randall-Bold Plant
RWF	Recycled Water Facility
SCADA	Supervisory Control and Data Acquisition
SF	Single-Family
SWRCB	State Water Resources Control Board
TDS	total dissolved solids
THMs	Trihalomethanes
TMDL	Total Maximum Daily Load

ULFT	Ultra Low Flow Toilet
WF	Water Factor
WPCF	Water Pollution Control Facility
WRCC	Western Regional Climate Center
WTP	Water Treatment Plant
yr	year

## **Appendix B**

### **California Department of Water Resources 2005 Urban Water Management Plan Checklist**

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2005 Urban Water Management Plan "Review for Completeness" Form  
For DWR Review Staff Use

Coordination with Appropriate Agencies (Water Code § 10620 (d)(1)(2))

Yes

Participated in area, regional, watershed or basin wide plan

Name of plan \_Lead Agency \_

Reference & Page Number

Describe the coordination of the plan preparation and anticipated benefits.

Reference & Page Number

Table 1							
Coordination with Appropriate Agencies							
Check at least one box on each row	Participated in developing the plan	Commented on the draft	Attended public meetings	Was contacted for assistance	Was sent a copy of the draft plan	Was sent a notice of intention to adopt	Not Involved / No Information
Other water suppliers							
Water management agencies							
Relevant public agencies							
Other							
Other							

Describe resource maximization / import minimization plan (Water Code §10620 (f))

Describe how water management tools / options maximize resources & minimize need to import water

Reference & Page Number



**Plan Updated in Years Ending in Five and Zero** (Water Code § 10621(a))

☐ Date updated and adopted plan received \_\_\_\_\_ (enter date) \_\_\_\_\_ Reference & Page Number

**City and County Notification and Participation** (Water Code § 10621(b))

☐ Notify any city or county within service area of UWMP of plan review & revision \_\_\_\_\_ Reference & Page Number

☐ Consult and obtain comments from cities and counties within service area \_\_\_\_\_ Reference & Page Number

**Service Area Information** Water Code § 10631 (a)

☐ Include current and projected population \_\_\_\_\_ Reference & Page Number

☐ Population projections were based on data from state, regional or local agency \_\_\_\_\_ Reference & Page Number

Table 2						
Population - Current and Projected						
	2005	2010	2015	2020	2025	2030 - opt
Service Area Population						

☐ Describe climate characteristics that affect water management \_\_\_\_\_ Reference & Page Number

☐ Describe other demographic factors affecting water management \_\_\_\_\_ Reference & Page Number

Table 3						
Climate						
	January	February	March	April	May	June
Standard Average ETo						
Average Rainfall						
Average Temperature						

**Table 3 (continued)**

Climate							
	July	August	September	October	November	December	Annual
Average ETo							0
Average Rainfall							0
Average Temperature							0

Water Sources		(Water Code § 10631 (b))	
<input type="checkbox"/>	Identify existing and planned water supply sources	2-1	Reference & Page Number
<input type="checkbox"/>	Provide current water supply quantities	2-1	Reference & Page Number
<input type="checkbox"/>	Provide planned water supply quantities	2-1	Reference & Page Number

Table 4						
Current and Planned Water Supplies - AFY						
Water Supply Sources	2005	2010	2015	2020	2025	2030 - opt
Water purchased from:						
U.S. Bureau of Reclamation						
Department of Water Resources						
Arcade Water District						
Calleguas Municipal Water District						
Castaic Lake Water Agency						
Central Basin Municipal Water District						
Chino Basin Municipal Water District						
Coastal Municipal Water District						
Contra Costa Water District						
Eastern Municipal Water District						
Foothill Municipal Water District						
Humboldt Bay Municipal Water District						

Inland Empire Utilities Agency						
Joint Regional Water Supply System						
Kern County Water Agency						
Metropolitan Water District of Southern Cal						
Municipal Water District of Orange County						
North of The River Municipal Water District						
Placer County Water Agency						
Sacramento County Water Management Dist						
San Diego County Water Authority						
San Francisco City of						
San Juan Water District						
San Luis Obispo County						
Santa Clara Valley Water District						
Solano County Water Agency						
Sonoma County Water Agency						
Stockton East Water District						
Tehachapi-Cummings County Water District						
Three Valleys Municipal Utility District						
Upper San Gabriel Valley Municipal Water						
Water Facilities Authority						
West Basin Municipal Water District						
Western Municipal Water Dist of Riverside						
Zone 7						
Other Wholesaler 1 (enter agency name)						
Other Wholesaler 2 (enter agency name)						
Other Wholesaler 3 (enter agency name)						
Supplier produced groundwater						

Supplier surface diversions						
Transfers in or out						
Exchanges In or out						
Recycled Water (projected use)						
Desalination						
Other						
Other						
Total	0	0	0	0	0	0

If Groundwater identified as existing or planned source		(Water Code §10631 (b)(1-4))
<input type="checkbox"/>	Has management plan	_____ Reference & Page Number
<input type="checkbox"/>	Attached management plan (b)(1)	_____ Reference & Page Number
<input type="checkbox"/>	Description of basin(s) (b)(2)	_____ Reference & Page Number
<input type="checkbox"/>	Basin is adjudicated	_____ Reference & Page Number
<input type="checkbox"/>	If adjudicated, attached order or decree (b)(2)	_____ Reference & Page Number
<input type="checkbox"/>	Quantified amount of legal pumping right (b)(2)	_____ Reference & Page Number

Table 5 Groundwater Pumping Rights - AF Year	
Basin Name	Pumping Right - AFY
Total	0

<input type="checkbox"/>	DWR identified, or projected to be, in overdraft (b)(2)	_____	Reference & Page Number
<input type="checkbox"/>	Plan to eliminate overdraft (b)(2)	_____	Reference & Page Number
<input type="checkbox"/>	Analysis of location, amount & sufficiency, last five years (b)(3)	_____	Reference & Page Number
<input type="checkbox"/>	Analysis of location & amount projected, 20 years (b)(4)	_____	Reference & Page Number

Table 6					
Amount of Groundwater pumped - AFY					
Basin Name (s)	2000	2001	2002	2003	2004
	0	0	0	0	0
% of Total Water Supply					

Table 7					
Amount of Groundwater projected to be pumped - AFY					
Basin Name(s)	2010	2015	2020	2025	2030 - opt
	0	0	0	0	0
% of Total Water Supply	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!

Reliability of Supply	(Water Code §10631 (c) (1-3))
<input type="checkbox"/> Describes the reliability of the water supply and vulnerability to seasonal or climatic shortage	_____ Reference & Page Number

Table 8
---------

Supply Reliability - AF Year					
		Multiple Dry Water Years			
Average / Normal Water Year	Single Dry Water Year	Year 1	Year 2	Year 3	Year 4
% of Normal	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!

Table 9			
Basis of Water Year Data			
Water Year Type	Source name	Source name	Source name
Average Water Year			
Single-Dry Water Year			
Multiple-Dry Water Years			

Reference & Page Number

Reference & Page Number

Reference & Page Number

Water Sources Not Available on a Consistent Basis

(Water Code §10631 (c))

<input type="checkbox"/>	Describe the reliability of the water supply due to seasonal or climatic shortages	<div></div>	Reference & Page Number
<input type="checkbox"/>	Describe the vulnerability of the water supply to seasonal or climatic shortages	<div></div>	Reference & Page Number
<input type="checkbox"/>	No unreliable sources	<div></div>	Reference & Page Number

Table 10				
Factors resulting in inconsistency of supply				
Name of supply	Legal	Environ-mental	Water Quality	Climatic


☐ Describe plans to supplement or replace inconsistent sources with alternative sources or DMMs

Reference & Page Number

Reference & Page Number

☐ No inconsistent sources

Transfer or Exchange Opportunities

(Water Code §10631 (d))

☐ Describe short term and long term exchange or transfer opportunities

Reference & Page Number

Reference & Page Number

☐ No transfer opportunities

Table11					
Transfer and Exchange Opportunities - AF Year					
Transfer Agency	Transfer or Exchange	Short term	Proposed Quantities	Long term	Proposed Quantities
Total			0		0

Water Use Provisions

(Water Code §10631 (e)(1)(2))

☐ Quantify past water use by sector

4-2

Reference & Page Number



Quantify current water use by sector

Project future water use by sector

4-2

Reference & Page Number

4-2

Reference & Page Number

TABLE 12 - Past, Current and Projected Water Deliveries								
	2000				2005			
	metered		unmetered		metered		unmetered	
Water Use Sectors	# of accounts	Deliveries AFY	# of accounts	Deliveries AFY	# of accounts	Deliveries AFY	# of accounts	Deliveries AFY
Single family								
Multi-family								
Commercial								
Industrial								
Institutional/gov								
Landscape								
Agriculture								
other								
Total	0	0	0	0	0	0	0	0

TABLE12 (continued) - Past, Current and Projected Water Deliveries								
	2010				2015			
	metered		unmetered		metered		unmetered	
Water Use Sectors	# of accounts	Deliveries AFY	# of accounts	Deliveries AFY	# of accounts	Deliveries AFY	# of accounts	Deliveries AFY
Single family								
Multi-family								
Commercial								
Industrial								
Institutional/gov								



Water Distributed	2000	2005	2010	2015	2020	2025	2030 - opt
La Cumbre							
name of agency							
name of agency							
Total							

☐

Identify and quantify additional water uses

Reference & Page Number

Table 14							
Additional Water Uses and Losses - AF Year							
Water Use	2000	2005	2010	2015	2020	2025	2030 - opt
Saline barriers							
Groundwater recharge							
Conjunctive use							
raw water							
recycled							
other (define)							
Unaccounted-for system losses							
Total							

Any recycled water  
14.

Table 15							
Total Water Use - AF Year							
Water Use	2000	2005	2010	2015	2020	2025	2030 - opt
Total of Tables 12, 13, 14							

(Water Code §10631 (f) & (g), the 2005 Urban Water Management Plan "Review of DMMs for Completeness" Form is found on Sheet 2

Planned Water Supply Projects and Programs, including non-implemented DMMs		(Water Code §10631 (g))
<input type="checkbox"/>	No non-implemented / not scheduled DMMs	<div></div> Reference & Page Number
<input type="checkbox"/>	Cost-Benefit includes economic and non-economic factors (environmental, social, health, customer impact, and technological factors)	<div></div> Reference & Page Number
<input type="checkbox"/>	Cost-Benefit analysis includes total benefits and total costs	<div></div> Reference & Page Number
<input type="checkbox"/>	Identifies funding available for Projects with higher per-unit-cost than DMMs	<div></div> Reference & Page Number
<input type="checkbox"/>	Identifies Suppliers' legal authority to implement DMMs, efforts to implement the measures and efforts to identify cost share partners	<div></div> Reference & Page Number

Table 16	
Evaluation of unit cost of water resulting from non-implemented / non-scheduled DMMs and planned water supply project and programs	
Non-implemented & Not Scheduled DMM / Planned Water Supply Projects (Name)	Per-AF Cost (\$)

Planned Water Supply Projects and Programs		(Water Code §10631 (h))
<input type="checkbox"/>	No future water supply projects or programs	
<input type="checkbox"/>	Detailed description of expected future supply projects & programs	<div></div> Reference & Page Number
<input type="checkbox"/>	Timeline for each proposed project	<div></div> Reference & Page Number
<input type="checkbox"/>	Quantification of each projects normal yield (AFY)	<div></div> Reference & Page Number

Quantification of each projects single dry-year yield (AFY)

Quantification of each projects multiple dry-year yield (AFY)

Reference & Page Number

Reference & Page Number

Table 17							
Future Water Supply Projects							
Project Name	Projected Start Date	Projected Completion Date	Normal-year AF to agency	Single-dry year yield AF	Multiple-Dry-Year 1 AF	Multiple-Dry-Year 2 AF	Multiple-Dry-Year 3 AF

Opportunities for development of desalinated water

(Water Code §10631 (i))

Describes opportunities for development of desalinated water, including, but not limited to, ocean water, brackish water, and groundwater, as a long-term supply

No opportunities for development of desalinated water

Table 18	
Opportunities for desalinated water	
Sources of Water	Check if yes
Ocean Water	
Brackish ocean water	
Brackish groundwater	
other	

other

District is a CUWCC signatory

(Water Code § 10631 (j))

Urban suppliers that are California Urban Water Conservation Council members may submit the annual reports identifying water demand management measures currently being implemented, or scheduled for implementation, to satisfy the requirements of subdivisions (f) and (g). The supplier's CUWCC Best Management Practices Report should be attached to the UWMP.

Agency is a CUWCC member

2003-04 annual updates are attached to plan

Both annual updates are considered completed by CUWCC website

Reference & Page Number

Reference & Page Number

Reference & Page Number

If Supplier receives or projects receiving water from a wholesale supplier

(Water Code §10631 (k))

Yes

Agency receives, or projects receiving, wholesale water

Agency provided written demand projections to wholesaler, 20 years

Reference & Page Number

Reference & Page Number

Table 19					
Agency demand projections provided to wholesale suppliers - AFY					
Wholesaler	2010	2015	2020	2025	2030 - opt
(name 1)					
(name 2)					
(name 3)					

Wholesaler provided written water availability projections, by source, to agency, 20 years

Reference & Page Number

(if agency served by more than one wholesaler, duplicate this table and provide the source availability for each wholesaler)

Table 20					
Wholesaler identified & quantified the existing and planned sources of water- AFY					

Wholesaler sources	2010	2015	2020	2025	2030 - opt
(source 1)					
(source 2)					
(source 3)					

☐

Reliability of wholesale supply provided in writing by wholesale agency \_\_\_\_\_ Reference & Page Number  
(if agency served by more than one wholesaler, duplicate this table and provide the source availability for each wholesaler)

Table 21 Wholesale Supply Reliability - % of normal AFY					
	Multiple Dry Water Years				
Wholesaler sources	Single Dry	Year 1	Year 2	Year 3	Year 4
(source 1)					
(source 2)					
(source 3)					

Table 22 Factors resulting in inconsistency of wholesaler's supply				
Name of supply	Legal	Environment	Water Quality	Climatic

#### Water Shortage Contingency Plan Section

#### Stages of Action

(Water Code § 10632)

(Water Code § 10632 (a))

☐

Provide stages of action \_\_\_\_\_ Reference & Page Number



Provide the water supply conditions for each stage

Includes plan for 50 percent supply shortage

Reference & Page Number

Reference & Page Number

Table 23		
Water Supply Shortage Stages and Conditions		
RATIONING STAGES		
Stage No.	Water Supply Conditions	% Shortage

Three-Year Minimum Water Supply

(Water Code §10632 (b))

Identifies driest 3-year period

Minimum water supply available by source for the next three years

Reference & Page Number

Reference & Page Number

Table 24					*Note: If reporting after 2005, please change the column headers (Year 1, 2, & 3) to the appropriate years
Three-Year Estimated Minimum Water Supply - AF Year					
source**	Normal	Year 1	Year 2	Year 3	

Total				
-------	--	--	--	--

Preparation for catastrophic water supply interruption

(Water Code §10632 (c))

☐

Provided catastrophic supply interruption plan

Reference & Page Number

Table 25 Preparation Actions for a Catastrophe	
Possible Catastrophe	Check if Discussed
Regional power outage	
Earthquake	
Other (name event)	
Other (name event)	

Prohibitions

(Water Code § 10632 (d))

☐

List the mandatory prohibitions against specific water use practices during water shortages

Reference & Page Number

Table 26 Mandatory Prohibitions
------------------------------------

Examples of Prohibitions	Stage When Prohibition Becomes Mandatory
Using potable water for street washing	
Other (name prohibition)	
Other (name prohibition)	
Other (name prohibition)	
Other (name prohibition)	
Other (name prohibition)	
Other (name prohibition)	

Consumption Reduction Methods

(Water Code § 10632 (e))

☐

List the consumption reduction methods the water supplier will use to reduce water use in the most \_\_\_\_\_ Reference & Page Number restrictive stages with up to a 50% reduction.

Table 27		
Consumption Reduction Methods		
Consumption Reduction Methods	Stage When Method Takes Effect	Projected Reduction (%)
name method		

name method		
name method		
name method		
name method		
name method		

Penalties

(Water Code § 10632 (f))

List excessive use penalties or charges for excessive use

Reference & Page Number

Table 28	
Penalties and Charges	
Penalties or Charges	Stage When Penalty Takes Effect
Penalty for excess use	
Charge for excess use	
Other (name penalties or charges)	
Other (name penalties or charges)	
Other (name penalties or charges)	
Other (name penalties or charges)	
Other (name penalties or charges)	
Other (name penalties or charges)	

Revenue and Expenditure Impacts

(Water Code § 10632 (g))

Describe how actions and conditions impact revenues

Describe how actions and conditions impact expenditures

Describe measures to overcome the revenue and expenditure impacts

Reference & Page Number

Reference & Page Number

Reference & Page Number

Table 29	
Proposed measures to overcome revenue impacts	
Names of measures	Check if Discussed
Rate adjustment	
Development of reserves	
name of measure	
name of measure	

Table 30	
Proposed measures to overcome expenditure impacts	
Names of measures	Check if Discussed
name of measure	
name of measure	
name of measure	
name of measure	

Water Shortage Contingency Ordinance/Resolution

(Water Code § 10632 (h))

☐

Attach a copy of the draft water shortage contingency resolution or ordinance.

Reference & Page Number

Reduction Measuring Mechanism

(Water Code § 10632 (i))

☐

Provided mechanisms for determining actual reductions

Reference & Page Number

Table 31	
Water Use Monitoring Mechanisms	
Mechanisms for determining actual reductions	Type data expected (pop-up?)
Name mechanism	
Name mechanism	
Name mechanism	

Recycling Plan Agency Coordination

Water Code § 10633

☐

Describe the coordination of the recycling plan preparation information to the extent available..

Reference & Page Number

Table 32	
Participating agencies	
	participated
Water agencies	
Wastewater agencies	
Groundwater agencies	
Planning Agencies	

Wastewater System Description

(Water Code § 10633 (a))

☐

Describe the wastewater collection and treatment systems in the supplier's service area

Reference & Page Number

Quantify the volume of wastewater collected and treated

Reference & Page Number

Table 33							
Wastewater Collection and Treatment - AF Year							
Type of Wastewater	2000	2005	2010	2015	2020	2025	2030 - opt
Wastewater collected & treated in service area							
Volume that meets recycled water standard							

Wastewater Disposal and Recycled Water Uses

(Water Code § 10633 (a - d))

Describes methods of wastewater disposal

Reference & Page Number

Describe the current type, place and use of recycled water

Reference & Page Number

None

Reference & Page Number

Describe and quantify potential uses of recycled water

Reference & Page Number

Table 34							
Disposal of wastewater (non-recycled) AF Year							
Method of disposal	Treatment Level	2005	2010	2015	2020	2025	2030 - opt
Name of method							
Name of method							
Name of method							
Name of method							
Total							

Table 35							
Recycled Water Uses - Actual and Potential (AFY)							
User type	Treatment Level	2005	2010	2015	2020	2025	2030 - opt
Agriculture							



Landscape							
Wildlife Habitat							
Wetlands							
Industrial							
Groundwater Recharge							
Other (user type)							
Other (user type)							
Total							

☐

Determination of technical and economic feasibility of serving the potential uses

Reference & Page Number

Projected Uses of Recycled Water

(Water Code § 10633 (e))

☐

Projected use of recycled water, 20 years

Reference & Page Number

Table 36					
Projected Future Use of Recycled Water in Service Area - AF Year					
	2010	2015	2020	2025	2030 - opt
Projected use of Recycled Water					

☐

Compare UWMP 2000 projections with UWMP 2005 actual

(§ 10633 (e))

Reference & Page Number

☐

None

Reference & Page Number

Table 37		
Recycled Water Uses - 2000 Projection compared with 2005 actual - AFY		
User type	2000 Projection for 2005	2005 actual use
Agriculture		
Landscape		

Wildlife Habitat		
Wetlands		
Industrial		
Groundwater Recharge		
Other (user type)		
Other (user type)		
Total		

Plan to Optimize Use of Recycled Water		(Water Code § 10633 (f))	
<div></div>	Describe actions that might be taken to encourage recycled water uses		Reference & Page Number
<div></div>	Describe projected results of these actions in terms of acre-feet of recycled water used per year		Reference & Page Number

Table 38					
Methods to Encourage Recycled Water Use					
Actions	AF of use projected to result from this action				
	2010	2015	2020	2025	2030 - opt
Financial incentives					
name of action					
name of action					
name of action					
name of action					
name of action					
name of action					
name of action					
Total					

☐

Provide a recycled water use optimization plan which includes actions to facilitate the use of recycled water (dual distribution systems, promote recirculating uses)

Reference & Page Number

Water quality impacts on availability of supply

(Water Code §10634)

☐

Discusses water quality impacts (by source) upon water management strategies and supply reliability

Reference & Page Number

☐

No water quality impacts projected

Table 39						
Current & projected water supply changes due to water quality - percentage						
water source	2005	2010	2015	2020	2025	2030 - opt

Supply and Demand Comparison to 20 Years

(Water Code § 10635 (a))

☐

Compare the projected normal water supply to projected normal water use over the next 20 years, in 5-year increments.

Reference & Page Number

Table 40					
Projected Normal Water Supply - AF Year					
(from table 4)	2010	2015	2020	2025	2030 - opt
Supply					
% of year 2005					

Table 41

Projected Normal Water Demand - AF Year					
(from table 15)	2010	2015	2020	2025	2030 - opt
<b>Demand</b>					
% of year 2005					

Table 42					
Projected Supply and Demand Comparison - AF Year					
	2010	2015	2020	2025	2030 - opt
<b>Supply totals</b>					
<b>Demand totals</b>					
<b>Difference</b>					
Difference as % of Supply					
Difference as % of Demand					

Supply and Demand Comparison: Single-dry Year Scenario

(Water Code § 10635 (a))

☐

Compare the projected single-dry year water supply to projected single-dry year water use over the \_\_\_\_\_ Reference & Page Number  
next 20 years, in 5-year increments.

Table 43					
Projected single dry year Water Supply - AF Year					
	2010	2015	2020	2025	2030 - opt

<b>Supply</b>					
% of projected normal					

<b>Table 44</b> <b>Projected single dry year Water Demand - AF Year</b>					
	2010	2015	2020	2025	2030 - opt
<b>Demand</b>					
% of projected normal					

<b>Table 45</b> <b>Projected single dry year Supply and Demand Comparison - AF Year</b>					
	2010	2015	2020	2025	2030 - opt
<b>Supply totals</b>					
<b>Demand totals</b>					
<b>Difference</b>					
Difference as % of Supply					
Difference as % of Demand					

**Supply and Demand Comparison: Multiple-dry Year Scenario**

**(Water Code § 10635 (a))**

☐

Project a multiple-dry year period (as identified in Table 9) occurring between 2006-2010 and compare projected supply and demand during those years

Reference & Page Number

Table 46					
Projected supply during multiple dry year period ending in 2010 - AF Year					
	2006	2007	2008	2009	2010
<b>Supply</b>					
% of projected normal					

Table 47					
Projected demand multiple dry year period ending in 2010 - AFY					
	2006	2007	2008	2009	2010
<b>Demand</b>					
% of projected normal					

Table 48					
Projected Supply and Demand Comparison during multiple dry year period ending in 2010- AF Year					
	2006	2007	2008	2009	2010
<b>Supply totals</b>					
<b>Demand totals</b>					
<b>Difference</b>					
Difference as % of Supply					

Difference as % of Demand					
---------------------------	--	--	--	--	--

Project a multiple-dry year period (as identified in Table 9) occurring between 2011-2015 and  
 compare projected supply and demand during those years

\_\_\_\_\_
 Reference & Page Number

Table 49					
Projected supply during multiple dry year period ending in 2015 - AF Year					
	2011	2012	2013	2014	2015
Supply					
% of projected normal					

Table 50					
Projected demand multiple dry year period ending in 2015 - AFY					
	2011	2012	2013	2014	2015
Demand					
% of projected normal					

Table 51					
Projected Supply and Demand Comparison during multiple dry year period ending in 2015- AF Year					
	2011	2012	2013	2014	2015
Supply totals					
Demand totals					
Difference					



Difference as % of Supply					
Difference as % of Demand					

☐

Project a multiple-dry year period (as identified in Table 9) occurring between 2016-2020 and compare projected supply and demand during those years

\_\_\_\_\_ Reference & Page Number

Table 52					
Projected supply during multiple dry year period ending in 2020 - AF Year					
	2016	2017	2018	2019	2020
Supply					
% of projected normal					

Table 53					
Projected demand multiple dry year period ending in 2020 - AFY					
	2016	2017	2018	2019	2020
Demand					
% of projected normal					

Table 54					
Projected Supply and Demand Comparison during multiple dry year period ending in 2020- AF Year					

	2016	2017	2018	2019	2020
Supply totals					
Demand totals					
Difference					
Difference as % of Supply					
Difference as % of Demand					

☐

Project a multiple-dry year period (as identified in Table 9) occurring between 2021-2025 and \_\_\_\_\_ Reference & Page Number  
compare projected supply and demand during those years

Table 55					
Projected supply during multiple dry year period ending in 2025 - AF Year					
	2021	2022	2023	2024	2025
Supply					
% of projected normal					

Table 56					
Projected demand multiple dry year period ending in 2025 - AFY					
	2021	2022	2023	2024	2025
Demand					

% of projected normal					
-----------------------	--	--	--	--	--

Table 57					
Projected Supply and Demand Comparison during multiple dry year period ending in 2025- AF Year					
	2021	2022	2023	2024	2025
Supply totals					
Demand totals					
Difference					
Difference as % of Supply					
Difference as % of Demand					

Provision of Water Service Reliability section to cities/counties within service area

(Water Code § 10635(b))

☐

Provided Water Service Reliability section of UWMP to cities and counties within which it provides

water supplies within 60 days of UWMP submission to DWR

Reference & Page Number

Does the Plan Include Public Participation and Plan Adoption

(Water Code § 10642)

☐

Attach a copy of adoption resolution

Encourage involvement of social, cultural & economic community groups

Plan available for public inspection

Reference & Page Number

☐

Encourage involvement of social, cultural & economic community groups

Reference & Page Number

☐

Plan available for public inspection

Reference & Page Number

<div><div></div><div></div></div>	Provide proof of public hearing	_____	Reference & Page Number
	Provided meeting notice to local governments	_____	Reference & Page Number

<b>Review of implementation of 2000 UWMP</b>		<b>(Water Code § 10643)</b>
--	--	-----------------------------

<div><div></div><div></div><div></div></div>	Reviewed implementation plan and schedule of 2000 UWMP	_____	Reference & Page Number
	Implemented in accordance with the schedule set forth in plan	_____	Reference & Page Number
	2000 UWMP not required	_____	Reference & Page Number

<b>Provision of 2005 UWMP to local governments</b>		<b>(Water Code § 10644 (a))</b>
--	--	---------------------------------

<div><div></div></div>	Provide 2005 UWMP to DWR, and cities and counties within 30 days of adoption	_____	Reference & Page Number
------------------------	--	-------	-------------------------

<b>Does the plan or correspondence accompanying it show where it is available for public review</b>	<b>(Water Code § 10645)</b>
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<div><div></div></div>	Does UWMP or correspondence accompanying it show where it is available for public review	_____	Reference & Page Number
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## **Appendix C**

### **California Department of Water Resources 2005 Demand Management Measures Checklist**

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**2005 Urban Water Management Plan "Review of DMMs for Completeness" Form**  
**For DWR Review Staff Use**

**Water Survey Programs for Single-Family and Multi-Family Residential Customers (10631 f(1)(a))**

**Implementation**

**(Section 10631 (f))**

☐

Describe demand management measure currently being implemented or scheduled for implementation (10631 (f) (1)(2))

Reference & Page  
Number

Year program started

or

Year program scheduled to start

☐

Describes steps necessary to implement measure

Reference & Page  
Number

Table A1					
Actual	2001	2002	2003	2004	2005
# of single family surveys					
# of multifamily surveys					
actual expenditures - \$					
actual water savings - AFY					

Table A2					
Planned	2006	2007	2008	2009	2010
# of single family surveys					
# of multifamily surveys					
projected expenditures - \$					

projected water savings - AFY					
-------------------------------	--	--	--	--	--

☐

Describe the methods, if any, used to evaluate the effectiveness of this demand management measure (10631 (f)(3))

Reference & Page Number

☐

Provide estimates, if available, of existing conservation savings on water use and the effect of such savings on the supplier's ability to further reduce demand (10631(f)(4))

Reference & Page Number

Provided an evaluation for this DMM if it is not implemented

- ☐

Evaluate legal authority (10631 (g)(4))
- ☐

Evaluate economic and non-economic factors (10631 (g)(1))
- ☐

Evaluate environmental, social, health factors (10631 (g)(1))
- ☐

Evaluate customer impact & technological factors (10631 (g)(1))

(Section 10631 (g))

Table A3 - 10631 (g)(2)	
Cost Effectiveness Summary	
Total Costs	
Total Benefits	
Discount Rate	
Time Horizon	
Cost of Water (\$ per AF)	
Water Savings (AFY)	

- ☐

Describe efforts to work with other relevant agencies to ensure implementation of the measure and to share the cost of implementation (10631 (g)(4))
- ☐

Describe funding available to implement any planned water supply project that would provide water at a higher unit cost (10631 (g)(3) & (h))

If Another Agency Implementing

☐

If another Agency is implementing (10631 (g)(4))

Agency Name

Residential Plumbing Retrofit (10631 (f)(1)(b))

Implementation

(Section 10631 (f) & (h))

☐

Describe demand management measure currently being implemented or scheduled for implementation (10631 (f) (1)(2))

Reference & Page  
Number

Year program started

or

Year program scheduled to start

☐

Describes steps necessary to implement measure

Reference & Page  
Number

# of pre-1992 SF accounts

# of pre-1992 MF accounts

Table B1					
Actual	1992-2001	2002	2003	2004	2005
# of single family devices					
# of multi-family devices					
actual expenditures - \$					
actual water savings - AFY					

Table B2
----------

Planned	2006	2007	2008	2009	2010
# of single family devices					
# of multi-family devices					
projected expenditures - \$					
projected water savings - AFY					

☐

Describe the methods, if any, used to evaluate the effectiveness of this demand management measure (10631 (f)(3))

Reference & Page  
Number

☐

Provide estimates, if available, of existing conservation savings on water use and the effect of such savings on the supplier's ability to further reduce demand (10631(f)(4))

Reference & Page  
Number

Provided an evaluation for this DMM if it is not implemented

(Section 10631 (g))

☐

Evaluate legal authority  
(10631 (g)(4))

☐

Evaluate economic and non-economic factors  
(10631 (g)(1))

☐

Evaluate environmental, social, health factors  
(10631 (g)(1))

☐

Evaluate customer impact & technological factors  
(10631 (g)(1))

☐

Describe efforts to work with other relevant agencies to ensure implementation of the measure and to share the cost of

Table B3 - 10631 (g)(2)	
Cost Effectiveness Summary	
Total Costs	
Total Benefits	
Discount Rate	
Time Horizon	
Cost of Water	
Water Savings (AFY)	

☐ implementation (10631 (g)(4))

☐ Describe funding available to implement any planned water supply project that would provide water at a higher unit cost (10631 (g)(3) & (h))

If Another Agency Implementing

☐ If another Agency is implementing (10631 (g)(4))

Agency Name

System Water Audits, Leak Detection and Repair (10631 (f)(1)(c))

Implementation

☐ Describe demand management measure currently being implemented or scheduled for implementation (10631 (f) (1)(2))

Year program started

\_\_\_\_\_

or

Year program scheduled to start

\_\_\_\_\_

☐ Describes steps necessary to implement measure

Reference & Page Number

\_\_\_\_\_

Year of last complete audit

\_\_\_\_\_

Year of next complete audit

\_\_\_\_\_

Table C1					
Actual	2001	2002	2003	2004	2005
% of unaccounted water					
miles of mains surveyed					
miles of lines repaired					

actual expenditures - \$					
actual water savings - AFY					

Table C2					
Planned	2006	2007	2008	2009	2010
% of unaccounted water					
miles of mains surveyed					
miles of lines repaired					
projected expenditures - \$					
projected water savings - AFY					

☐

Describe the methods, if any, used to evaluate the effectiveness of this demand management measure (10631 (f)(3))

Reference & Page  
Number

☐

Provide estimates, if available, of existing conservation savings on water use and the effect of such savings on the supplier's ability to further reduce demand (10631(f)(4))

Reference & Page  
Number

Provided an evaluation for this DMM if it is not implemented

☐

Evaluate legal authority  
(10631 (g)(4))

☐

Evaluate economic and non-economic factors  
(10631 (g)(1))

☐

Evaluate environmental, social, health factors

(Section 10631 (g))

Table C3 - 10631 (g)(2)	
Cost Effectiveness Summary	
Total Costs	
Total Benefits	
Discount Rate	

- ☐

(10631 (g)(1))

Evaluate customer impact & technological factors (10631 (g)(1))
- ☐

Time Horizon

Cost of Water

Water Savings (AFY)
- ☐

Describe efforts to work with other relevant agencies to ensure implementation of the measure and to share the cost of implementation (10631 (g)(4))
- ☐

Describe funding available to implement any planned water supply project that would provide water at a higher unit cost (10631 (g)(3) & (h))

If Another Agency Implementing

☐

If another Agency is implementing (10631 (g)(4))

Agency Name

Metering with Commodity Rates (10631 (f)(1)(d))

Implementation

(Section 10631 (f) & (h))

☐

Describe demand management measure currently being implemented or scheduled for implementation (10631 (f) (1)(2))

Year program started \_\_\_\_\_ or Year program scheduled to start \_\_\_\_\_

\_\_\_\_\_

Reference & Page Number

☐

Describes steps necessary to implement measure

Total number of accounts \_\_\_\_\_ # of accounts w/o commodity rates \_\_\_\_\_

\_\_\_\_\_

Reference & Page Number

Table D1					
Actual	2001	2002	2003	2004	2005



# of unmetered accounts					
# of retrofit meters installed					
# of accounts w/o commodity rates					
actual expenditures - \$					
actual water savings - AFY					

Table D2					
Planned	2006	2007	2008	2009	2010
# of unmetered accounts					
# of retrofit meters installed					
# of accounts w/o commodity rates					
projected expenditures - \$					
projected water savings - AFY					

☐

Describe the methods, if any, used to evaluate the effectiveness of this demand management measure (10631 (f)(3))

Reference & Page  
Number

☐

Provide estimates, if available, of existing conservation savings on water use and the effect of such savings on the supplier's ability to further reduce demand (10631(f)(4))

Reference & Page  
Number

Provided an evaluation for this DMM if it is not implemented

(Section 10631 (g))

☐

Evaluate legal authority

Table D3 - 10631 (g)(2)
-------------------------

- ☐ (10631 (g)(4))  
Evaluate economic and non-economic factors  
(10631 (g)(1))
- ☐ Evaluate environmental, social, health factors  
(10631 (g)(1))
- ☐ Evaluate customer impact & technological factors  
(10631 (g)(1))

Cost Effectiveness Summary	
Total Costs	
Total Benefits	
Discount Rate	
Time Horizon	
Cost of Water	
Water Savings (AFY)	

- ☐ Describe efforts to work with other relevant agencies to ensure implementation of the measure and to share the cost of implementation (10631 (g)(4))
- ☐ Describe funding available to implement any planned water supply project that would provide water at a higher unit cost (10631 (g)(3) & (h))

If Another Agency Implementing

- ☐ If another Agency is implementing (10631 (g)(4))

Agency Name

Large Landscape Conservation Programs and Incentives (10631 (f)(1)(e))

Implementation

- ☐ Describe demand management measure currently being implemented or scheduled for implementation (10631 (f) (1)(2))

(Section 10631 (f) & (h))

Reference & Page Number

\_\_\_\_\_

Year program started \_\_\_\_\_ or Year program scheduled to start \_\_\_\_\_
- ☐ Describes steps necessary to implement measure

Reference & Page Number

\_\_\_\_\_

# of landscape accounts \_\_\_\_\_  
# of CII accounts \_\_\_\_\_

# of landscape accounts with budgets \_\_\_\_\_  
# of CII accounts w/ landscape surveys \_\_\_\_\_  
(CII mixed use meters)

Table E1					
Actual	2001	2002	2003	2004	2005
# of budgets developed					
# of surveys completed					
# of follow-up visits					
actual expenditures - \$					
actual water savings - AFY					

Table E2					
Planned	2006	2007	2008	2009	2010
# of budgets developed					
# of surveys completed					
# of follow-up visits					
projected expenditures - \$					
projected water savings - AFY					

Describe the methods, if any, used to evaluate the effectiveness of this demand management measure (10631 (f)(3))

Reference & Page  
Number

☐

Provide estimates, if available, of existing conservation savings on water use and the effect of such savings on the supplier's ability to further reduce demand (10631(f)(4))

Reference & Page  
Number

Provided an evaluation for this DMM if it is not implemented

☐

Evaluate legal authority  
(10631 (g)(4))

☐

Evaluate economic and non-economic factors  
(10631 (g)(1))

☐

Evaluate environmental, social, health factors  
(10631 (g)(1))

☐

Evaluate customer impact & technological factors  
(10631 (g)(1))

(Section 10631 (g))

Table E3 - 10631 (g)(2)	
Cost Effectiveness Summary	
Total Costs	
Total Benefits	
Discount Rate	
Time Horizon	
Cost of Water	
Water Savings (AFY)	

☐

Describe efforts to work with other relevant agencies to ensure implementation of the measure and to share the cost of implementation (10631 (g)(4))

☐

Describe funding available to implement any planned water supply project that would provide water at a higher unit cost (10631 (g)(3) & (h))

If Another Agency Implementing

☐

If another Agency is implementing (10631 (g)(4))

Agency Name

High-Efficiency Washing Machine Rebate Programs (10631 (f)(1)(f))

Implementation

(Section 10631 (f) & (h))

☐ Describe demand management measure currently being implemented or scheduled for implementation (10631 (f) (1)(2))

\_\_\_\_\_

Reference & Page Number

Year program started \_\_\_\_\_ or Year program scheduled to start \_\_\_\_\_

Other agencies offer rebates \_\_\_\_\_ Cost-effectiveness calcs attached \_\_\_\_\_

☐ Describes steps necessary to implement measure

\_\_\_\_\_

Reference & Page Number

Table F1					
Actual	2001	2002	2003	2004	2005
\$ per rebate					
# of rebates paid					
actual expenditures - \$					
actual water savings - AFY					

Table F2					
Planned	2006	2007	2008	2009	2010
\$ per rebate					
# of rebates paid					
projected expenditures - \$					
projected water savings - AFY					

☐ Describe the methods, if any, used to evaluate the effectiveness of this demand management measure (10631 (f)(3))

\_\_\_\_\_

Reference & Page Number

☐ Provide estimates, if available, of existing conservation savings on water use and the effect of such savings on the supplier's ability to further reduce

\_\_\_\_\_

Reference & Page Number

demand (10631(f)(4))

Provided an evaluation for this DMM if it is not implemented

- ☐ Evaluate legal authority  
(10631 (g)(4))
- ☐ Evaluate economic and non-economic factors  
(10631 (g)(1))
- ☐ Evaluate environmental, social, health factors  
(10631 (g)(1))
- ☐ Evaluate customer impact & technological factors  
(10631 (g)(1))

- ☐ Describe efforts to work with other relevant agencies to ensure implementation of the measure and to share the cost of implementation (10631 (g)(4))
- ☐ Describe funding available to implement any planned water supply project that would provide water at a higher unit cost (10631 (g)(3) & (h))

If Another Agency Implementing

- ☐ If another Agency is implementing (10631 (g)(4))

Table F3 - 10631 (g)(2)	
Cost Effectiveness Summary	
Total Costs	
Total Benefits	
Discount Rate	
Time Horizon	
Cost of Water	
Water Savings (AFY)	

Agency Name

Public Information Programs (10631 (f)(1)(g))

Implementation

- ☐ Describe demand management measure currently being implemented or scheduled for implementation (10631 (f) (1)(2))

Year program started

\_\_\_\_\_

or

Year program scheduled to start

\_\_\_\_\_

Reference & Page Number

\_\_\_\_\_



Describes steps necessary to implement measure

Reference & Page Number

Table G1					
Actual	2001	2002	2003	2004	2005
a. paid advertising					
b. Public Service Announcement					
c. Bill Inserts / Newsletters / Brochures					
d. Bill showing water usage in comparison to previous year's usage					
e. Demonstration Gardens					
f. Special Events, Media Events					
g. Speaker's Bureau					
h. Program to coordinate with other government agencies, industry and public interest groups and media					
actual expenditures - \$					

Table G2					
Planned	2006	2007	2008	2009	2010
a. paid advertising					
b. Public Service Announcement					
c. Bill Inserts / Newsletters / Brochures					
d. Bill showing water usage in comparison to previous year's usage					
e. Demonstration Gardens					
f. Special Events, Media Events					
g. Speaker's Bureau					
h. Program to coordinate with other					



government agencies, industry and public interest groups and media					
Projected expenditures - \$					

☐

Describe the methods, if any, used to evaluate the effectiveness of this \_\_\_\_\_ Reference & Page Number demand management measure (10631 (f)(3))

Provided an evaluation for this DMM if it is not implemented

- ☐ Evaluate legal authority  
(10631 (g)(4))
- ☐ Evaluate economic and non-economic factors  
(10631 (g)(1))
- ☐ Evaluate environmental, social, health factors  
(10631 (g)(1))
- ☐ Evaluate customer impact & technological factors  
(10631 (g)(1))

(Section 10631 (g))

Table G3 - 10631 (g)(2)	
Cost Effectiveness Summary	
Total Costs	
Total Benefits	
Discount Rate	
Time Horizon	
Cost of Water	
Water Savings (AFY)	

- ☐ Describe efforts to work with other relevant agencies to ensure implementation of the measure and to share the cost of implementation (10631 (g)(4))
- ☐ Describe funding available to implement any planned water supply project that would provide water at a higher unit cost (10631 (g)(3) & (h))

If Another Agency Implementing

- ☐ If another Agency is implementing (10631 (g)(4))

Agency Name

Implementation

(Section 10631 (f) & (h))

☐ Describe demand management measure currently being implemented or scheduled for implementation (10631 (f) (1)(2)) \_\_\_\_\_ Reference & Page Number

Year program started \_\_\_\_\_ or Year program scheduled to start \_\_\_\_\_

☐ Describes steps necessary to implement measure \_\_\_\_\_ Reference & Page Number

Table H1		No. of class presentations				
Actual	# of classes	2001	2002	2003	2004	2005
Grades K-3rd						
Grades 4th-6th						
Grades 7th-8th						
High School						
actual expenditures - \$						

Table H2		No. of class presentations				
Actual	# of classes	2006	2007	2008	2009	2010
Grades K-3rd						
Grades 4th-6th						
Grades 7th-8th						
High School						
projected expenditures - \$						

☐ Describe the methods, if any, used to evaluate the effectiveness of this demand management measure (10631 (f)(3)) \_\_\_\_\_ Reference & Page Number

☐ Did your agency's material meet state education framework requirements? \_\_\_\_\_ Reference & Page Number

Provided an evaluation for this DMM if it is not implemented

- ☐

Evaluate legal authority  
(10631 (g)(4))
- ☐

Evaluate economic and non-economic factors  
(10631 (g)(1))
- ☐

Evaluate environmental, social, health factors  
(10631 (g)(1))
- ☐

Evaluate customer impact & technological factors  
(10631 (g)(1))
- ☐

Describe efforts to work with other relevant agencies to ensure implementation of the measure and to share the cost of implementation (10631 (g)(4))
- ☐

Describe funding available to implement any planned water supply project that would provide water at a higher unit cost (10631 (g)(3) & (h))

If Another Agency Implementing

- ☐

If another Agency is implementing (10631 (g)(4))

(Section 10631 (g))

Table H3 - 10631 (g)(2)	
Cost Effectiveness Summary	
Total Costs	
Total Benefits	
Discount Rate	
Time Horizon	
Cost of Water	
Water Savings (AFY)	

Agency Name

Conservation Programs for Commercial, Industrial and Institutional (10631 (f)(1)(i))

Implementation

(Section 10631 (f) & (h))

- ☐

Describe demand management measure currently being implemented or scheduled for implementation (10631 (f) (1)(2))
 

Year program started
 
 or
 Year program scheduled to start

Reference & Page Number
- ☐

Describes steps necessary to implement measure
 

Reference & Page Number

# of Commercial accounts

# of Industrial accounts

# of Institutional accounts

Table I1					
Actual	2001	2002	2003	2004	2005
# of surveys completed					
Were incentives provided?					
# of follow-up visits					
actual expenditures - \$					
actual water savings - AFY					

Table I2					
Planned	2006	2007	2008	2009	2010
# of surveys completed					
Were incentives provided?					
# of follow-up visits					
projected expenditures - \$					
projected water savings - AFY					

- ☐

Describe the methods, if any, used to evaluate the effectiveness of this demand management measure (10631 (f)(3))

Reference & Page Number
- ☐

Provide estimates, if available, of existing conservation savings on water use and the effect of such savings on the supplier's ability to further reduce demand (10631(f)(4))

Reference & Page Number

Provided an evaluation for this DMM if it is not implemented

- ☐ Evaluate legal authority (10631 (g)(4))
- ☐ Evaluate economic and non-economic factors (10631 (g)(1))
- ☐ Evaluate environmental, social, health factors (10631 (g)(1))
- ☐ Evaluate customer impact & technological factors (10631 (g)(1))

- ☐ Describe efforts to work with other relevant agencies to ensure implementation of the measure and to share the cost of implementation (10631 (g)(4))
- ☐ Describe funding available to implement any planned water supply project that would provide water at a higher unit cost (10631 (g)(3) & (h))

If Another Agency Implementing

- ☐ If another Agency is implementing (10631 (g)(4))

(Section 10631 (g))	
Table I3 - 10631 (g)(2)	
Cost Effectiveness Summary	
Total Costs	
Total Benefits	
Discount Rate	
Time Horizon	
Cost of Water	
Water Savings (AFY)	

Agency Name

Conservation Programs for Commercial, Industrial & Institutional - Toilet Replacement (10631 (f)(1)(i))

(this data is part of the Council Annual Report but is not specifically requested in the UWMP Act) change

Implementation

(Section 10631 (f) & (h))

- ☐ Describe demand management measure currently being implemented or scheduled for \_\_\_\_\_ Reference & Page Number  
implementation (10631 (f) (1)(2))  
Year program started \_\_\_\_\_ or Year program scheduled to start \_\_\_\_\_
- ☐ Describes steps necessary to implement measure \_\_\_\_\_ Reference & Page Number

Table I4					
Actual	2001	2002	2003	2004	2005
# of commercial replacements					
# of industrial replacements					
# of institutional replacements					
actual expenditures - \$					
actual water savings - AFY					

Table I5					
Planned	2006	2007	2008	2009	2010
# of commercial replacements					
# of industrial replacements					
# of institutional replacements					
projected expenditures - \$					
projected water savings - AFY					

- ☐

Describe the methods, if any, used to evaluate the effectiveness of this demand management measure (10631 (f)(3))

Reference & Page Number
- ☐

Provide estimates, if available, of existing conservation savings on water use and the effect of such savings on the supplier's ability to further reduce demand (10631(f)(4))

Reference & Page Number

Provided an evaluation for this DMM if it is not implemented

(Section 10631 (g))

<input type="checkbox"/> Evaluate legal authority	Table I6 - 10631 (g)(2)
---	-------------------------

- ☐ (10631 (g)(4))  
Evaluate economic and non-economic factors
- ☐ (10631 (g)(1))  
Evaluate environmental, social, health factors
- ☐ (10631 (g)(1))  
Evaluate customer impact & technological factors

Cost Effectiveness Summary	
Total Costs	
Total Benefits	
Discount Rate	
Time Horizon	
Cost of Water	
Water Savings (AFY)	

- ☐ Describe efforts to work with other relevant agencies to ensure implementation of the measure and to share the cost of implementation (10631 (g)(4))
- ☐ Describe funding available to implement any planned water supply project that would provide water at a higher unit cost (10631 (g)(3) & (h))

If Another Agency Implementing

- ☐ If another Agency is implementing (10631 (g)(4))

Agency Name

Wholesale Agency Programs (10631 (f)(1)(j))

- ☐ Not a wholesale agency

Implementation

- ☐ Describe demand management measure currently being implemented or scheduled for implementation (10631 (f) (1)(2))

Year program started

# of suppliers you serve

or

Year program scheduled to start

Reference & Page Number
- ☐ Describes steps necessary to implement measure

Reference & Page Number



Table J1	Number of agencies assisted				
program activities	2001	2002	2003	2004	2005
Water Surveys					
Residential Retrofit					
System Audits					
Metering-Commodity Rates					
Landscape Programs					
Washing Machines					
Public Information					
School Education					
CII WC					
CII ULF					
Water Waste					
Pricing					
WC Coordinator					
Water Waste					
UFLT Replacement					
actual expenditures - \$					

Table J2	Number of agencies to be assisted				
program activities	2006	2007	2008	2009	2010
Water Surveys					
Residential Retrofit					
System Audits					
Metering-Commodity Rates					
Landscape Programs					
Washing Machines					
Public Information					

School Education					
CII WC					
CII ULF					
Water Waste					
Pricing					
WC Coordinator					
Water Waste					
UFLT Replacement					
projected expenditures - \$					

- ☐ Describe the methods, if any, used to evaluate the effectiveness of this demand management measure (10631 (f)(3))
- ☐ Provide estimates, if available, of existing conservation savings on water use and the effect of such savings on the supplier's ability to further reduce demand (10631(f)(4))

Provided an evaluation for this DMM if it is not implemented

- ☐ Evaluate legal authority (10631 (g)(4))
- ☐ Evaluate economic and non-economic factors (10631 (g)(1))
- ☐ Evaluate environmental, social, health factors (10631 (g)(1))
- ☐ Evaluate customer impact & technological factors (10631 (g)(1))

(Section 10631 (g))

Table J3 - 10631 (g)(2)	
Cost Effectiveness Summary	
Total Costs	
Total Benefits	
Discount Rate	
Time Horizon	
Cost of Water	
Water Savings (AFY)	

- ☐ Describe efforts to work with other relevant agencies to ensure implementation of the measure and to share the cost of

- ☐ implementation (10631 (g)(4))
- ☐ Describe funding available to implement any planned water supply project that would provide water at a higher unit cost (10631 (g)(3) & (h))

If Another Agency Implementing

☐ If another Agency is implementing (10631 (g)(4))

Agency Name

Conservation Pricing (10631 (f)(1)(k))

Implementation

☐ Describe demand management measure currently being implemented or scheduled for implementation (10631 (f) (1)(2))

Year program started

or

Year program scheduled to start

☐ Agency provides sewer service

☐ Describes steps necessary to implement measure

(Section 10631 (f) & (h))

Reference & Page Number

Reference & Page Number

Table K1			
RETAILERS			
Residential			
Water Rate Structure	pop-up list	Sewer Rate Structure	pop-up list
Year rate effective		Year rate effective	
Commercial			
Water Rate Structure	pop-up list	Sewer Rate Structure	pop-up list
Year rate effective		Year rate effective	

Industrial			
Water Rate Structure	pop-up list	Sewer Rate Structure	pop-up list
Year rate effective			Year rate effective
Institutional/Government			
Water Rate Structure	pop-up list	Sewer Rate Structure	pop-up list
Year rate effective			Year rate effective
Irrigation			
Water Rate Structure	pop-up list		
Year rate effective			
Other			
Water Rate Structure	pop-up list	Sewer Rate Structure	pop-up list
Year rate effective			Year rate effective
Table K2			
WHOLESALERS			
Water Rate Structure	pop-up list		
Year rate effective			

Provided an evaluation for this DMM if it is not implemented

- ☐ Evaluate legal authority  
(10631 (g)(4))
- ☐ Evaluate economic and non-economic factors  
(10631 (g)(1))
- ☐ Evaluate environmental, social, health factors

(Section 10631 (g))

Table K3 - 10631 (g)(2)	
Cost Effectiveness Summary	
Total Costs	
Total Benefits	
Discount Rate	

☐ (10631 (g)(1))  
Evaluate customer impact & technological factors  
(10631 (g)(1))

Time Horizon	
Cost of Water	
Water Savings (AFY)	

- ☐ Describe efforts to work with other relevant agencies to ensure implementation of the measure and to share the cost of implementation (10631 (g)(4))
- ☐ Describe funding available to implement any planned water supply project that would provide water at a higher unit cost (10631 (g)(3) & (h))

If Another Agency Implementing

☐ If another Agency is implementing (10631 (g)(4))

Agency Name

Water Conservation Coordinator (10631 (f)(1)(I))

Implementation

(Section 10631 (f) & (h))

- ☐ Describe demand management measure currently being implemented or scheduled for \_\_\_\_\_ Reference & Page Number  
implementation (10631 (f) (1)(2))  
Year program started \_\_\_\_\_ or Year program scheduled to start \_\_\_\_\_
- ☐ Describes steps necessary to implement measure \_\_\_\_\_ Reference & Page Number

Table L1					
Actual	2001	2002	2003	2004	2005
# of full-time positions					
# of full/part-time staff					
actual expenditures - \$					

Table L2					
Planned	2006	2007	2008	2009	2010
# of full-time positions					
# of full/part-time staff					
projected expenditures - \$					

**Provided an evaluation for this DMM if it is not implemented**

- ☐

Evaluate legal authority  
 (10631 (g)(4))
- ☐

Evaluate economic and non-economic factors  
 (10631 (g)(1))
- ☐

Evaluate environmental, social, health factors  
 (10631 (g)(1))
- ☐

Evaluate customer impact & technological factors  
 (10631 (g)(1))

- ☐

Describe efforts to work with other relevant agencies to ensure implementation of the measure and to share the cost of implementation (10631 (g)(4))
- ☐

Describe funding available to implement any planned water supply project that would provide water at a higher unit cost (10631 (g)(3) & (h))

**If Another Agency Implementing**

- ☐

If another Agency is implementing (10631 (g)(4))

Table L3 - 10631 (g)(2)	
Cost Effectiveness Summary	
Total Costs	
Total Benefits	
Discount Rate	
Time Horizon	
Cost of Water	
Water Savings (AFY)	

**(Section 10631 (g))**

Agency Name

Implementation

(Section 10631 (f) & (h))

☐ Describe demand management measure currently being implemented or scheduled for implementation (10631 (f) (1)(2)) \_\_\_\_\_ Reference & Page Number

Year program started \_\_\_\_\_ or Year program scheduled to start \_\_\_\_\_

☐ Describes steps necessary to implement measure \_\_\_\_\_ Reference & Page Number

Table M1					
Actual	2001	2002	2003	2004	2005
waste ordinance in effect					
# of on-site visits					
water softener ordinance					
actual expenditures - \$					

Table M2					
Planned	2006	2007	2008	2009	2010
waste ordinance in effect					
# of on-site visits					
water softener ordinance					
projected expenditures - \$					

☐ Describe the methods, if any, used to evaluate the effectiveness of this demand management measure (10631 (f) (3)) \_\_\_\_\_ Reference & Page Number

Provided an evaluation for this DMM if it is not implemented

(Section 10631 (g))

☐ Evaluate legal authority (10631 (g)(4))

Table M3 - 10631 (g)(2)
Cost Effectiveness Summary



- ☐ Evaluate economic and non-economic factors  
(10631 (g)(1))
- ☐ Evaluate environmental, social, health factors  
(10631 (g)(1))
- ☐ Evaluate customer impact & technological factors  
(10631 (g)(1))

Total Costs	
Total Benefits	
Discount Rate	
Time Horizon	
Cost of Water	
Water Savings (AFY)	

- ☐ Describe efforts to work with other relevant agencies to ensure implementation of the measure and to share the cost of implementation (10631 (g)(4))
- ☐ Describe funding available to implement any planned water supply project that would provide water at a higher unit cost (10631 (g)(3) & (h))

If Another Agency Implementing

- ☐ If another Agency is implementing (10631 (g)(4))

Agency Name

Residential Ultra-Low-Flush Toilet Replacement Programs (10631 (f)(1)(n))

Implementation

(Section 10631 (f) & (h))

- ☐ Describe demand management measure currently being implemented or scheduled for implementation (10631 (f) (1)(2))

Year program started  
# of SF pre-1992 accounts

\_\_\_\_\_ or \_\_\_\_\_  
\_\_\_\_\_

Year program scheduled to start  
\_\_\_\_\_

\_\_\_\_\_ Reference & Page Number
- ☐ Describes steps necessary to implement measure

\_\_\_\_\_ Reference & Page Number

Table N1	Single-Family
----------	---------------

Actual	2001	2002	2003	2004	2005
# of ULF rebates					
# of ULF direct installs					
# of ULF CBO installs					
actual expenditures - \$					
actual water savings - AFY					

Table N2	Single-Family				
Planned	2006	2007	2008	2009	2010
# of ULF rebates					
# of ULF direct installs					
# of ULF CBO installs					
projected expenditures - \$					
projected water savings - AFY					

# of MF pre-1992 units \_\_\_\_\_

Table N3	Multi-Family				
Actual	2001	2002	2003	2004	2005
# of ULF rebates					
# of ULF direct installs					
# of ULF CBO installs					
actual expenditures - \$					
actual water savings - AFY					

Table N4	Multi-Family				
Planned	2006	2007	2008	2009	2010
# of ULF rebates					
# of ULF direct installs					
# of ULF CBO installs					
projected expenditures - \$					
projected water savings - AFY					

- ☐ Is a toilet retrofit on resale ordinance in effect for your service area?
- ☐ Provide estimates, if available, of existing conservation savings on water use and the effect of such savings on the supplier's ability to further reduce demand  
(10631 (f)(4))
- Reference & Page Number

Provided an evaluation for this DMM if it is not implemented

- ☐ Evaluate legal authority  
(10631 (g)(4))
- ☐ Evaluate economic and non-economic factors  
(10631 (g)(1))
- ☐ Evaluate environmental, social, health factors  
(10631 (g)(1))
- ☐ Evaluate customer impact & technological factors

(Section 10631 (g))

Table N5 - 10631 (g)(2)	
Cost Effectiveness Summary	
Total Costs	
Total Benefits	
Discount Rate	
Time Horizon	
Cost of Water	

(10631 (g)(1))

<b>Water Savings (AFY)</b>	
----------------------------	--

☐

Describe efforts to work with other relevant agencies to ensure implementation of the measure and to share the cost of implementation (10631 (g)(4))

☐

Describe funding available to implement any planned water supply project that would provide water at a higher unit cost (10631 (g)(3) & (h))

**If Another Agency Implementing**

☐

If another Agency is implementing (10631 (g)(4))

<b>Agency Name</b>

## **Appendix D**

### **Past Water Conservation Ordinance 834-C-S**

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ORDINANCE NO. 834-C-S

AN URGENCY ORDINANCE OF THE CITY OF ANTIOCH  
ADOPTING DROUGHT EMERGENCY REGULATIONS AND  
RESTRICTING THE QUANTITY AND USE OF WATER,  
IMPOSING PENALTIES FOR NON-COMPLIANCE AND  
DECLARING THE URGENCY THEREOF

The City Council of the City of Antioch does ordain  
as follows:

SECTION 1. INTRODUCTION AND FINDINGS.

The City of Antioch purchases raw water from the Contra Costa Water District which the City subsequently treats, distributes, and sells to its municipal customers. The City does have rights to pump raw water directly from the San Joaquin River. However, the quantities which the City can pump are restricted by the salinity of the river water, and by the size and capacity of existing equipment. Even under the most favorable conditions, the City obtains by far the largest percentage of its raw water from the Contra Costa Water District.

The Contra Costa Water District is part of the federal water project controlled by the federal Bureau of Reclamation. Because California is currently in the sixth year of drought conditions, and because federal reservoirs are at very low levels, the Bureau of Reclamation has decided to reduce the amount of water available to users, including the Contra Costa Water District.



Because of these restrictions, the Contra Costa Water District has announced that a reduction of 15% will be made in the amount of raw water available for purchase by the City and by other municipal water agencies during 1992.

The City Council finds that notice of the consideration of this ordinance was published pursuant to the requirements of Water Code §3352.

**SECTION 2. DECLARATION OF WATER SHORTAGE EMERGENCY.**

Because of the restrictions and reductions ordered by the Bureau of Reclamation and the Contra Costa Water District, the City Council hereby finds and determines that the ordinary demands and requirements of water consumers cannot be satisfied without depleting the water supply of the City, and that there would be insufficient water for human consumption, sanitation and fire protection without the regulations and restrictions specified herein.

Based upon the foregoing, the City Council does hereby declare a water shortage emergency condition to exist in the City of Antioch. The regulations specified herein shall be effective from the date of the adoption of this ordinance through December 31, 1992, or until such earlier date as the Council may declare that the condition has ended.

**SECTION 3. ALLOCATION OF WATER.**

In order to achieve the overall reduction of 15%, the City does hereby allocate water as follows:

<u>Customer Type</u>	<u>Allocation</u>
each single unit residence .....	330 gallons per day
apartments, condominiums .....	15% below 1990 use
commercial .....	15% below 1990 use
industrial .....	15% below 1990 use
public facilities .....	15% below 1990 use
landscaping .....	15% below 1990 use

#### SECTION 4. RULES AND VARIANCES.

The City Manager and/or his designee is hereby authorized to promulgate rules and regulations further implementing the policies ordered in this ordinance. The City Manager and/or his designee is also authorized to settle disputes regarding definitions of terms, applicability, and other disputes or questions that may arise regarding the implementation of this ordinance.

The City Manager and/or his designee is also authorized to provide procedures for, and to consider, grant, or deny requests for variances or exceptions to the provisions of this ordinance. For example, provisions shall be made for exceptions to the allocations based upon medical need. Exceptions shall also be made in the allocation of single family housing units occupied by more than four individuals. An additional 70 gallons per day shall be allowed for each individual residing at a location in excess of four. However, nothing herein shall require the allocation of more than 750 gallons per day for a single family residence, irrespective of the number of individuals residing therein.

An appeals process shall be established by the City Manager for persons dissatisfied with any decision made regarding application for an exception or variance.

**SECTION 5. WATER BANKING.**

Customers who use less than their allocations on a monthly basis shall be entitled to "bank" and accumulate such savings for use later in the year. Such savings shall be credited so as to prevent, to the extent applicable, surcharges or penalties from being imposed in later months if the customer subsequently uses water in excess of his or her allocation. Such banking and crediting shall be on a gallon-for-gallon basis.

**SECTION 6. DETERMINATION OF GOALS; PENALTIES.**

On or about May 1, 1992, and on the first of each month thereafter, the City Manager shall determine whether the City is meeting its goal of a 15% overall reduction in water use. If the City Manager determines that the City is not meeting or substantially meeting its overall goal of reduction, he shall implement a penalty or surcharge to be added to the water bills of customers and to be collected and enforced in the same manner as the collection and enforcement of the regular water bill:

<u>Usage Exceeding Allotment By:</u>	<u>Excess Charge:</u>
1 - 20% .....	2x the price per unit
20.01 - 30% .....	4x the price per unit
30.01 - 40% .....	6x the price per unit
40.01 - 50% .....	8x the price per unit
over 50% .....	10x the price per unit

The City Manager or his designee shall also be authorized to promulgate rules and regulations regarding the installation of a flow restrictor for customers who use excessive amounts of water. A warning shall be provided prior to the installation of a restrictor.

If the City Manager determines that it is necessary to implement the fine/surcharges indicated herein, he shall give notice of such determination to the press and shall post such notice in the Office of the City Clerk.

The City Manager shall also track on a monthly basis whether the City is meeting its goal of overall reduction. The City Manager may implement the fine/surcharges indicated herein at any time subsequent to May 1, 1992, if he makes a determination that the City is not substantially meeting its overall goal of reduction of water use.

**SECTION 7. URGENCY ORDINANCE. EFFECTIVE IMMEDIATELY.**

The Council finds that the public health, safety and welfare require that this ordinance become effective immediately upon its adoption and passage. This ordinance shall be published once in the Antioch Daily Ledger within fifteen (15) days of its adoption, and shall become effective immediately upon its passage and adoption.

\* \* \* \* \*

I HEREBY CERTIFY that the foregoing ordinance was introduced and adopted as an urgency ordinance by a four-fifths (4/5) vote of the City Council of the City of Antioch at a regular meeting thereof, held on the 25th day of February, 1992, by the following vote:

AYES: Council Members Stone, Price, Rimbault, Freitas and Mayor Keller.

NOES: None.

ABSENT: None.

  
\_\_\_\_\_  
MAYOR OF THE CITY OF ANTIOCH

ATTEST:

  
\_\_\_\_\_  
CITY CLERK OF THE CITY OF ANTIOCH

## **Appendix E**

### **Landscaping and Irrigation Regulations**

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**City of Antioch**  
**Landscaping and Irrigation Regulations**

**1. General Requirements**

All landscaping and irrigation systems shall be designed, installed and maintained in accord with the standards and requirements of this section, which shall apply to all commercial, industrial, and residential projects requiring planned development, use permit and/or Design Review Board approval(s). The requirements of this section shall apply to all new construction, as well as existing structures (of over approximately 2,500 sq. ft.) undergoing significant exterior alterations. Individually owned single-family residences not within a Planned Development and commercial projects not requiring landscape areas (such as existing buildings in the Rivertown District) are exempt from the requirements of this section.

A. Prior to the issuance of a certificate of occupancy, the Community Development Department staff shall:

1. Verify that landscaping and irrigation has been installed in accordance with the approved plans with respect to size, number and species of plants and adequate water coverage. (In unique situations, a bond may be posted on the uncompleted work with the approval of the Zoning Administrator.)
2. Obtain from the applicant and/or developer a performance bond (period of one year after issuance of certificate of occupancy) to insure plant establishment. Bond shall cover cost of replacing all plant material but may exclude material and labor costs relating to irrigation and hardscape.

B. All planting areas shall be permanently maintained. As used in this section, "maintained" includes watering, weeding, pruning, insect and pest control, and replacement of plant materials, and irrigation equipment as needed to preserve the health and appearance of plant materials. Should the Neighborhood Improvement Coordinator determine that landscaping is not being maintained as defined by this section, the City reserves the right, at the owner's expense, to either undertake itself, or contract for, any and all work necessary to restore landscaping.

**2. Required Landscape Plans**

- A. Landscape plans should be prepared by a licensed landscape architect, or equally qualified professional. The Zoning Administrator, Planning Commission, and/or Design Review Board may require as a project specific condition that final landscape plans be prepared by a licensed landscape architect. All landscape plans shall be drawn to scale and be consistent with architectural and civil engineering site plans.
- B. All applications for final development plan, use permit, and/or design review shall provide a preliminary landscape plan. This plan shall, as a minimum, illustrate the extent and nature of proposed plantings as well as a proposed plant pallet.
- C. Final landscape and irrigation plans shall be submitted concurrently with architectural, structural, and civil engineering plans when a building permit is requested. No building permit shall be issued for any project governed by the requirements of this section, until final landscape and irrigation plans have been reviewed and approved by Staff.
  1. Final landscape plans shall identify specific plant materials to be used, providing both common and botanical names, sizes and quantities.
  2. Irrigation Plans. Irrigation plans, encouraging drip irrigation systems whenever possible, shall be



submitted with development plans and shall contain all construction details for an automatic system including but not limited to, the following:

- i. Location, type and size of lines;
- ii. Location, type and gallon output of heads;
- iii. Location and sizes of valves;
- iv. Location and type of controller;
- v. Installation details;
- vi. Location and type of backflow prevention device (as per Health Code); and
- vii. Available water pressure and water meter outlet size.

### **3. General Design Standards**

- A. Landscape plans shall demonstrate a recognizable pattern or theme for the overall development by choice and location of materials. To accomplish this, landscape plans shall conform to the following:
  1. Plant materials shall be selected for: drought tolerance; adaptability and relationship to Antioch environment; color, form and pattern; ability to provide shade; soil retention; fire resistance, etc. The overall landscape plan shall be integrated with all elements of the project, such as buildings, parking lots and streets, to achieve desirable microclimate and minimize energy demand. Plant materials and landscape design shall be consistent with the City's water conservation guidelines.
  2. Plant materials shall be sized and spaced to achieve immediate effect and shall normally not be less than a 15-gallon container for trees, 5-gallon container for specimen shrubs, and a 1-gallon container for mass planting. Turf areas shall be from sod and ground cover from either 1 gallon containers or flats. Larger plant materials may be required on a case by case basis in order to achieve a more immediate landscape benefit.
  3. The use of crushed rock or gravel for large area coverage shall be avoided (except for walks and equestrian paths).
  4. Nonturf areas, such as shrub beds, shall be top dressed with a medium decorative bark mulch to a depth of 2" or approved alternative.
  5. Where shrubs or low-level vegetation are used, vegetative matter at maturity shall cover at least 75 percent of actual planted area.

### **4. Specific Design Standards**

- A. In addition to the general requirements of this section, additional code requirements and/or policy direction may be adopted by the City Council to address specific design issues. It is the applicant's responsibility to obtain all relevant information from the Department of Community Development prior to submittal of landscape plans.
  1. Landscaping of parking facilities shall be as presented in this Ordinance.

2. Landscaping and associated grading of open spaces in planned developments shall conform to policy adopted by City Council Resolution No. 89-263.
3. Treatment of natural and man made creeks and drainageways shall conform to adopted City Council Resolution 92/237.
4. Water conservation measures shall be incorporated in all landscape design and maintenance programs as required by the Antioch Municipal Code.

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## **Appendix F**

### **Resolution 89-263 for Landscape Guidelines for Public Open Space Area with Planned Developments**

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# LANDSCAPE GUIDELINES FOR PLANNED DEVELOPMENTS

APPROVED BY COUNCIL RESOLUTION 89-263, 8/22/89  
CITY OF ANTIOCH

## Introduction

### I. PURPOSE

To assure that the public open space areas within Planned Developments provide the maximum aesthetic benefit to the community while minimizing the costs of landscape installation, maintenance, and water use. Public open space areas are defined as parcels within the development which are owned and/or maintained by either the city, a landscape maintenance district, or a public/private utility (EBMUD, PG&E etc.). Public open space areas are identified and established as part of the development review process (ie planned development, tentative map, etc.)

### II. ORGANIZATION OF GUIDELINES

These guidelines are divided into 3 (three) sections. The first, "Design Standards", addresses the different types and uses of landscaping and explains the relationship between grading and landscape design. The second section, "Landscape Plan Review Process", explains the requirements for plan submittal and the steps leading to plan approval. The third section addresses the regulation of the installation and initial maintenance of landscaping, as well as the requirements for final acceptance of landscape improvements by the City.

# Design Standards

## I. TYPES OF LANDSCAPES

The degree of landscaping provided should be tailored to the visibility of the site and the nature of grading that will be taking place. Generally, there are three classes of landscaping that will be used in open space areas. Class I is the most intense with Class III being the least. All open space areas will be classified as requiring one of the 3 (three) treatments. The components of the three classes are defined below, and their applications are discussed in the following section labeled "Uses of Landscape Types".

- A. CLASS I - Class I is what may be called "conventional landscaping". This class will have the highest aesthetic impact, along with the highest water use.

All areas will have either turf or ground cover planted from flats. A variety of shrubs, vines, and trees will also be utilized. For this traditional type of planting, all trees must be at least 15 gallon, with 5 gallon shrubs. 1 gallon shrubs may be considered on a case by case basis. In many cases, street trees will be selected from pallets to be established for the various arterial and collector roads. Full, permanent and automatic irrigation will be provided with conventional spray and bubbler systems.

- B. CLASS II - Class II is to be considered a mid-range landscape, providing limited irrigated planting in place of either conventional Class I Landscaping or unirrigated grasses. While no low growing ground covers would be required, the main purpose of the Class II landscape is to cover graded slopes using a "shrub cover". The shrub cover may be used to either: a) provide coverage for 100% of total slope area; or b) provide partial slope coverage by clustering shrubs in irregular forms to simulate naturally occurring mixes of grasses and chaparral growth. In many cases, the two approaches will be used together, so that a highly visible slope face will receive 100% coverage and then "feather out" gradually into a less visible area.

Initially, areas to receive Class II shrub plantings shall be hydroseeded with an unirrigated "nurse crop"

for erosion control. Ultimate cover shall be provided by low growing, quick spreading shrubs. These shrubs may be planted from 1 gallon containers at 6' on center or if approved on a case by case basis, from liners at approximately 3' on center. Ideally, the desired cover should be provided in about three (3) years.

Other native and drought tolerant trees and shrubs are to be planted in clusters. Trees and large shrubs should be added to the "shrub cover" to provide accents and mass screening where needed. Selected plants should reflect a naturalistic setting, avoiding highly ornamental plantings. (NOTE, a list of appropriate trees and shrubs is attached as an appendix to these guidelines. Staff intends to update this list as new information regarding plant performance becomes available).

At this class, a variety of liners one, five and 15 gallon plant sizes may be used. Since all of the plants used in Class II are drought tolerant, water use should be less than with Class I. Automatic irrigation will either be from a permanent drip system (such as Pepco, or equal) or conventional spray and/or bubblers. Flow sensors to detect pressure loss (such as Data Industrial, or equal) shall be incorporated into the irrigation system, when required, so the affected system would shut down if there was a break in the line.

- C. CLASS III - Class III plantings introduce the fewest changes to the natural landscape. Most of the areas to receive Class III treatment will be undisturbed open spaces where the natural grasses will be retained. In these undisturbed situations, the only additions to the existing landscape would be plantings of coast live and blue oaks, along with California Buckeyes. These trees will be clustered as non-irrigated seedlings at a rate of approximately 50 per acre. The intent is to recreate the Savannah landscape that has currently survived only in the higher foothills above Antioch. Special containers made for dry seedling plantings known as slips or liners shall be used. These containers shall provide wire protection and water retaining polymers shall be placed in planting holes. In some unique or transitional situations, 5 and 15 gallon oak trees from nursery stock may be required.

In disturbed areas, a low growing hydroseed mix shall be used to replace the existing grasses. A variety of mixes, such as hard fescue will be considered on a case by case basis. In addition to replacing the grassland cover, oak seedlings and trees shall be planted as discussed above.



In both disturbed and undisturbed situations, the only irrigation used may be for the occasional planting of oak tree clusters from nursery stock as discussed above. As with Class II, low water use bubblers will be used.

## II. USES OF LANDSCAPE TYPES

The three general classes of landscape types will be used both separately and in combination to match the aesthetic requirement of the specific situation. The plantings of the different classes should blend into each other, creating transitions where some shrubs and trees overlap the different zones. Highly linear "divisions" between the zones should be avoided.

Basically, Class I is to be used only in highly visible and accessible situations. Parkways and landscape strips adjacent to arterial and collector streets will be mostly planted with Class I landscapes. Open space areas adjacent to local streets and cul-de-sacs will receive a band of Class I landscaping of approximately 8' to 15' in depth.

Class II landscaping shall be used on graded slopes which are both highly visible and artificial in appearance. The most typical situation where Class II shall be used is on a 2 to 1 or 3 to 1 slope which is both adjacent to an arterial road and contains mid-slope benches. Because these slopes have the highly visible and unnatural horizontal "banding" from the benches, and are usually steeper than the natural topography, they require the addition of irrigated landscaping to soften their appearance.

Another common use of Class II landscaping will be to act as a backdrop for the Class I plantings used along arterials, collectors, and local streets where they abut open space. This backdrop should extend for approximately 10' to 15' back from the Class I plantings. In this and in most situations, Class I and II landscapes should blend into each other, varying the limit line of the more refined Class I plantings.

Class III treatment will be used for ungraded slopes and graded slopes which have either low visibility, or have been graded to reflect the pre-existing contours. The use of Class III treatment is more likely to be acceptable if the graded slope appears as natural as possible. This would require these slopes to:

- a) generally have slopes no steeper than three to one.
- b) have curvilinear contours which simulate natural forms.
- c) utilize concrete drainage benches only at the bottom of

slopes. Mid-slope benches, if required for soil engineering purposes, would highlight the artificial aspects of the slope and necessitate Class II level planting.

It should be stressed that the use of naturalistic grading with Class III treatment is highly desirable as it both preserves the image of natural hillsides and reduces landscaping costs to both developer and maintenance district.

### III. REDUCTION OF FIRE HAZARDS IN OPEN SPACE AREAS

The Riverview Fire Protection District requires that fire risk be reduced by the provision of a 30' fire break immediately adjacent to all homes which join an open space area. The fire district has stated that this "fire break" can be established by either:

- a) removing all growth by discing or chemical control.
- b) limiting height of natural grasses to approximately 6 inches by cutting or chemical control.
- c) use of "wet belt" landscaping which uses both permanent spray irrigation and fire retardant plant materials.

Where the fire break is immediately uphill from the homes, the area will have little visibility since the homes will block views of the slope. In these situations, grass removal or growth restrictor is the most appropriate. Where the need for the fire break is downhill from homes, and therefore likely to be highly visible, a "wet belt" landscaped treatment will most likely be required.

This wet belt can be achieved in many ways. All Class I landscapes will qualify as wet belt plantings.

But because some of the plants most likely to be used in Class II situations may not be considered fire retardant, Class II plantings will not automatically be considered a wet belt zone.

For a list of appropriate shrubs and ground covers to use in place of standard Class II scrubs, see Attachment #1.

The different shrubs species should be placed in multiple small clusters, so the risk of die out from too large of area of one species of shrub is reduced. This type wet belt may be irrigated by drip or spray.

This approach is intended to blend with Class II planting. Plants from the Attachment #1 list could be blended throughout a bank of Class II planting so that plantings

within and without the wet belt zone appear related. Furthermore, trees that are not a high fire risk (such as Coast Live and Blue Oak) which are used in Class II planting may be occasionally placed inside the wet belt zone to further blend the planting zones.

An alternate form of wet belt planting would be the establishment of a low growing grass or legume from hydroseed. These areas would be spray irrigated and must be kept green at all times. This treatment may blend best with the unirrigated Class III areas, although its use due to the greater addition of surface water, is subject to soils engineers' approval.

A final note on fire breaks address large parcels (ie. over 5 acres) of ungraded open spaces areas. These areas will be divided by seasonal discing to create areas of natural grasses not larger than 5 acres apiece. The location of these annual fire breaks should be determined early in landscape/plan development so that no oak seedlings are planted where discing will take place.

It must be stressed that the specific requirements of the fire district will vary from site to site so plantings related to fire safety will be reviewed on a case by case basis.

#### IV. UNIQUE SITUATIONS

Some sites may have unique features (such as long and narrow utility easements) that require additional treatment other than found in Class III, but where the more intense Class II treatment may be unnecessary. In these cases, use of an irrigated meadow grass may be considered on a case by case basis. This treatment would be implemented by occasional trees irrigated by individual bubblers.

# Landscape review process

## I. PLANNED DEVELOPMENT PLAN REVIEW

As part of the planned development/tentative map review process, a "landscape zones" map must be submitted. This plan conceptually shows where the three classes of planting will be utilized, as well as the locations of "wet belt" planting. Although most of this initial landscape plan review will be limited to the degree of landscape treatment proposed for an open space area (ie: Class II versus Class III) rather than specific plant materials, street trees for the major arterials should be included. The landscape zones map should use the preliminary grading plan for the planned development as a base (usually @ 100 scale). It should be noted that just as the preliminary grading plan is subject to change due to evolving information on the soils and geology of the site, the location of landscape zone may vary at the time more precise grading plans are developed.

While detailed "conceptual landscape plans" for the entire site are not required, preliminary meetings with staff may indicate that a conceptual plan that highlights specific areas of concern (such as a neighborhood entry, highly visible slope, or linear trailway) is desirable.

## II. USE PERMIT REVIEW AND PRE-HEARING STAFF REVIEW

After the final development plan/tentative map have been approved, use permit review is required for the specific phases of the project. The use permit allows for more detailed review of grading, landscaping and exact unit and lot line locations. Use permit review shall precede engineering services' plan checking of the final map and civil improvement plans.

To begin the process, the applicant should review a preliminary grading and lot layout plan with planning staff. As a result of staff's comments, regarding grading refinements and landscape requirements, the applicant should prepare the required use permit submittals.

### III. USE PERMIT SUBMISSION REQUIREMENTS

The use permit submittal shall include both grading and planting plans at 40 scale. The planting plan shall be of at least a "design development" stage, including a proposed plant pallet and ground cover and shrubs shown as masses. Specific tree and shrub "call outs" are desirable, so a draft of the final working drawings is acceptable in lieu of the "design development" drawing. These plans shall be reviewed by Planning, Engineering, Maintenance Services, and Fire District for conformance to the planned development approval and these landscape policy guidelines. It should be noted that in cases of hardship, due to project scheduling, the Zoning Administrator may allow landscape "design development" plans to be submitted after use permit hearing.

Once the use permit is approved, the plan changes required by "project specific conditions" shall be incorporated into the final grading and landscape working drawings submitted to Engineering Services.

With final grading and planting plans approved, precise working drawings of layout, irrigation, and planting must be submitted for final approval by the Public Works Department, Engineering Services.

### IV. FINAL WORKING DRAWING SUBMISSION REQUIRED

The final working drawing submittal shall:

- a) be on 24" X 36" size sheets and be to an engineering scale (1" = 10', 20' or 40'), as required by Engineering Services
- b) call out all quantity totals and/or spacing requirements for all ground cover and shrubs planted from 1 and 5 gallon containers
- c) utilize base sheets with approved grading and lot layout. Grading informations should be screened to 50%. All information extraneous to landscape issues (ie. building footprints, grading and drainage notes etc.) should be screened and/or removed so that all landscape call outs and irrigation lines are clearly legible.
- d) utilize standard City irrigation details and specify previously accepted irrigation products whenever possible. Applicants should contact Engineering Services prior to plan submittal for information.

Three copies shall be submitted to Engineering Services. A set shall be routed to Planning to verify compliance of use permit conditions. Once all Engineering concerns are addressed, a final set of photo mylars shall be submitted for acceptance by the City Engineer. All applicable licenses and signatures shall be on each page of the set to be accepted.

# Landscape installation, maintenance and final acceptance

## I. INSTALLATION AND ACCEPTANCE FOR MAINTENANCE

The bond posted by the builder for the general infrastructure improvements shall include the streetscape and open space landscape improvements. None of this bond shall be released until the landscape installation is initially accepted by both Planning and Engineering staff. Initial acceptance for maintenance shall be based on compliance with the approved grading plan and the final working drawings as approved by the City Engineer. Should all other aspects of the infrastructure improvements be completed prior to the completion of the landscape work, all or part of the general improvement bond may be released with the approval of the City Engineer. But prior to this general bond release, the builder must post performance bond for the remaining landscape work. This bond shall cover the complete cost of the work, as estimated by either the builder's landscape architect, contractor, or City staff. (Note: the release and posting of all bonds shall be in compliance with the subdivision requirements of the Antioch Municipal Code.)

## II. MAINTENANCE PERIOD

Once the acceptance for maintenance is given, the builder is responsible for 90 days maintenance of the landscape improvements. A portion of the general bond posted for subdivision improvements shall be retained to reflect the cost of potential replanting should the builder fail to provide proper maintenance during this 90 day period. During this period, officials from the Engineering Services (parks and maintenance services) shall schedule regular walk-throughs with the builder's contractor to review the project's status, help refine maintenance practices, and to correct current deficiencies. Problems with the irrigation system shall be corrected by the next watering cycles, and all others by the next walk-through.

## III. FINAL ACCEPTANCE

At the end of the 90 days maintenance period, both Planning and Engineering shall review landscape improvements for final acceptance, using the following criteria (It should be noted

ATTACHMENT #1

Suggested plant list for Class II plantings - July 1989

Subject to revision - additional plants not currently on list will be considered on a case by case basis.

TREES

- Pinus elderica
- Pistacia Chinensis (Chinese Pitache)
- Quercus douglasii (Blue Oak)
- Quercus agrifolia (Coast Live Oak)
- Schinus molle (California Pepper)

SHRUBS

- Acacia redolens
- Arctosaphylos (Manzanita - various species)
- Baccharis pulularis - Pigeon Pt. (Prostrate Coyote Brush)
- Ceanothus (various species)
- Westringia Rosemarniformis

Shrubs that qualify for "wet zone" plantings:

- Atriplex Semibaccata (Creeping Saltbush)
- Artemesia caucasia (Spreading Sagebrush)
- Ceanothus (prostrate forms only)
- Myoporum parvitolium (Prostrate Myoporum)

NOTE: resources for possible additional plantings include:

- Water-Conserving Plants And Landscapes For The Bay Area, EBMUD, 1986
- Trees And Shurbs For Dry California Landscapes, by Bob Perry, Land Design Publishing, 1981

Corey\landscap

P L A N   C H E C K   G U I D E L I N E S   date\_\_\_\_\_

AS BUILT PLANS MUST BE SUBMITTED TO CITY BEFORE PROJECT WILL BE FORMALLY ACCEPTED. Must Include 1 Set of Laminated 8 1/2" x 11" Reduced Scale Irrigation Plans.

THE DEVELOPER WILL BE RESPONSIBLE FOR SCHEDULING. 30 Day Inspections During Required 90 Day Maintenance Period.

Yes No N/A

Irrigation System:

----	----	----	Check valves on any 10' or higher slope (KBI brand).
----	----	----	Control valves as per our CD one valve/box.
----	----	----	Isolation valves as required.
----	----	----	44 NP Quick coupler with locking lid and box located 12" from central valves installed as per our detail, ratio = 1 qc:4 valves or valve manifold area.
----	----	----	Quick coupler 3" below box lid.
----	----	----	Quick couplers next to tennis courts, picnic tables - 1 quick coupler at 2 opposing corners of tennis courts.
----	----	----	1 Quick coupler within 40' of tables.
----	----	----	1 Quick coupler/cul-de-sac.
----	----	----	Controller - Rain Master EV-XX-SAT series for 8 stations or above. EVADJS sensors (if used).
----	----	----	Irritrol MC+ on jobs under eight stations.
----	----	----	Controllers installed per our CD details. Cabinet 4X size of controller.
----	----	----	Pop up sprinklers instead of risers. Pop up bubblers 1-shrub, 2-tree.
----	----	----	As Built plans made available before release of job.
----	----	----	Sequence valves in order. Mark valve number on lid of valve box (2 1/2" letters and numbers).
----	----	----	Manual sprinkler system for baseball infield.
----	----	----	1 PVC union on all valves with one gate valve.
----	----	----	Brooks #1419 Box for Automatic Valves.
			#1100 Box for Gate & Quick Coupler Valves.
----	----	----	Irrigation system designed to complete summer watering (80% ET) in 12 hours.
----	----	----	Pressure check system 125 PSI for 2 hours on main lines.
----	----	----	Sleeves under pavement and identifying marks put on pavement.
----	----	----	RP Febco 825Y supported by concrete pad.
----	----	----	Coverage check and 14 day watering period before planting.
----	----	----	Swing joints on all heads.
----	----	----	Sprinkler system guarantee shall be 1 year and any manufacturers warranties.
----	----	----	Pipe shall be no closer than 4" to walkways 8" from buildings.
----	----	----	Pipe-main line = PVC - 1120-1220, type I, schedule 40
			lateral line = PVC - 1120-1220, class 200.
----	----	----	PVC solvent welds - all cuts shall be square; primer to be used.
----	----	----	Fittings - schedule 80 - main line, schedule 40 - laterals.
----	----	----	Thread sealant - non hardening compatible with pipe.
----	----	----	Wire - U.L. approved for direct burial, copper, AWG-UF 600 volt #14 (minimum). Common wire shall be white (2 per system), control wires all same color other than white. Wires can be color coded according to use (i.e. orange = shrubs, red = turf, etc.).



Yes No N/A

--- --- --- One bubbler per tree (min.) in all areas including turf.  
 --- --- --- Wires shall be labelled at clock with station number.  
 --- --- --- Splicing - no splices other than in automatic valve boxes.  
 --- --- --- Packaged approved underground splice connectors only (i.e.  
 --- --- --- Pentite, snaptite. 3M-DBY Seal Pack).  
 --- --- --- Extra wires (of one different color other than what is  
 --- --- --- already used) shall run along mainline at a ratio of 1  
 --- --- --- extra wire per 6 stations used on clock. These wires  
 --- --- --- shall loop inside all valve boxes.  
 --- --- --- Operations Manual - to be supplied in three ring binder.  
 --- --- --- Shall include manufacturers data sheets, maintenance and  
 --- --- --- parts information of any equipment installed and supplier  
 --- --- --- from where it was obtained.  
 --- --- --- Flow monitor and shut-off master valve on slopes over 3:1  
 --- --- --- (Data Industrials).  
 --- --- --- Pepco Drip Systems only. Emitter tubing not to exceed  
 --- --- --- 15'. Emitters and pip shall be buried.  
 --- --- --- Irrigation Heads - located 4" inside fences, curbs,  
 --- --- --- structures, walks.  
 --- --- --- Supply a laminated, color coded (by station) reduced scale  
 --- --- --- 8-1/2"x11" layout plan at each controller.  
 --- --- --- Pop-up bubblers only on cul-de-sacs - 1/shrub, 2/tree.  
 --- --- --- Phone line to controllers.

Landscaping:

--- --- --- Deep root boxes on all trees within 10' of pavement.  
 --- --- --- Trees shall not be planted in areas confined by pavement  
 --- --- --- that are less than 10' from the pavement.  
 --- --- --- All trees to be 15 gallon size unless other sizes  
 --- --- --- approved.  
 --- --- --- Contractor to provide City with soil analysis  
 --- --- --- recommendations from City approved laboratory.  
 --- --- --- Contractor shall follow recommendations of testing lab.  
 --- --- --- and inform City of recommendation for approval.  
 --- --- --- Amendments shall be 6 cubic yards/1,000 sq ft of nitrified  
 --- --- --- redwood of fir compost rototilled 8" into native soil.  
 --- --- --- Two inch layer of bark mulch (size 1/4"-1/2" or shredded)  
 --- --- --- shall be distributed over all ground cover areas and 3"  
 --- --- --- under shrubs and unplanted areas.  
 --- --- --- City shall be notified 3 days prior to amending or  
 --- --- --- fertilizing planting areas for inspection during work.  
 --- --- --- Pre-emergent herbicide applied to all ground cover, non-  
 --- --- --- planted areas and tot lots, prior to sand and bark  
 --- --- --- installation, at manufacturer's recommended rates.  
 --- --- --- Contact City 24 hours prior to application.  
 --- --- --- All plant material to be inspected by City prior to  
 --- --- --- installation.  
 --- --- --- Agriform (20-10-5) tablets installed at manufacturers  
 --- --- --- recommendation rates under all trees and shrubs.  
 --- --- --- Fertilizer shall be a urea based 16-6-8, or City approved  
 --- --- --- product at recommended rate approved by City.  
 --- --- --- Developers to provide City standard park name signs as per  
 --- --- --- our detail, and install.  
 --- --- --- Ninety day maintenance period after final inspection on  
 --- --- --- all areas. Maintenance period shall require weekly main-  
 --- --- --- tenance. Provide schedule prior to 90 day maintenance

Yes No N/A

period. Schedule 1 inspection per month with City.  
 . --- --- Concrete "V" ditch at base of slope adjacent to property line.  
 --- --- Use Hard Fescue (*Festuca Longifolia*) for slope erosion control.  
 --- --- One year guarantee on trees.  
 --- --- One year guarantee on shrubs.  
 --- --- Shrub type to be a maximum of 3' in height when mature on any median or intersection radius in view of traffic.  
 --- --- As Built plans made available before release of job.  
 --- --- Jute netting on any planted slope greater than 3:1.  
 --- --- Areas under trees and shrubs shall be excavated to a depth of 3' in areas where compaction has previously occurred, i.e. cul-de-sacs, medians, etc.

Rest Room:

--- --- Provide 1 gallon of each paint color used to City.  
 --- --- Vandal proof fasteners on all inside fixtures.  
 --- --- Two inch water supply to building.  
 --- --- Cleanout at drinking fountain trap.  
 --- --- Pressure regulator on supply.  
 --- --- Roof detail (to match subdivision).  
 --- --- Santana Plastic Partitions.  
 --- --- Fluorescent lights - vandal proof Kenall fixtures: one on each exterior corner of building, one over lavatory, one over toilet area, one in storeroom. All on timer except storeroom.  
 --- --- Pneumatic closers on men's and women's doors.  
 --- --- State approved signing.  
 --- --- Separate shut-off valve for drinking fountain.  
 --- --- Shut-off valve for building.  
 --- --- Hose bib with check valve inside each room.  
 --- --- Stainless steel mirrors.  
 --- --- Toilet Paper Dispensers shall be roll type. Vandal Stop Products, 851 Al Marida Dr., Cambell, CA 95008  
 --- --- Cap on sewer vent.  
 --- --- Phone line stubbed into storeroom.  
 --- --- Separate 100 amp service to circuit breaker panel.

Paving:

--- --- Concrete only - unless approved.  
 --- --- 10' width on main access paths.  
 --- --- Sweeping curves for vehicular traffic from street through park.  
 --- --- 12" wide mowbands.  
 --- --- Metal pipe, capped, painted, locking ballards - locks above grade (see bollard detail).

Play Equipment Area:

. --- --- Do not locate drinking fountain within 100'.  
 --- --- Metal, powder coated as per our specifications.  
 --- --- Lappis #16-20 sand - 12" deep minimum.  
 --- --- Drainage system as per our detail.

Yes No N/A

--- --- --- Concrete curb and minimum 10' sidewalk around play area.  
 --- --- --- Meets all federal and state product and installation codes.  
 --- --- --- Provide 1-Mar-Ga sand comb to City. Mar-Ga Simple Concepts, P.O. Box 4910, Salinas, CA 93912.

Structures:

--- --- --- Removable ballards shall be color-coated round steel pipe timberform 2190-3R or equivalent (per our detail).  
 --- --- --- 3' vinyl clad chain link perimeter fence around entire site or property lines. 6 gauge fabric. Top-rail, bottom wire. 12" mowband at base of fence.  
 --- --- --- Centrecon Area Lights with vandal proof screws on access plates.  
 --- --- --- Picnic tables per our detail.  
 --- --- --- Ratio of 2 barbecues/3 tables and 1 garbage can/2 tables.  
 --- --- --- Garbage can holders - Patterson Williams 1151-01 or 1151-02 with lockable hold downs.  
 --- --- --- Two #1151-02/tot lot located at opposite ends of area.  
 --- --- --- One #1151-01 next to rest room.  
 --- --- --- Two #1151-01 next to dugouts at baseball field.  
 --- --- --- All drinking fountains connected to drain system. Install drain cleanout and shut off valve.  
 --- --- --- Barbecue - Miracle #1104 or equivalent.  
 --- --- --- Drinking Fountain Haws standard with vandal proof screws - drain installed into park drainage system.  
 --- --- --- Basketball offset upright = 1525 with #14 backstop and #8131 goal ring.  
 --- --- --- Tennis Court - post = Patterson Williams #2201-40 with #8351 net.  
 --- --- --- Prep. Tennis Courts for future lighting.  
 --- --- --- Picnic Tables - Mexico Forge 866-1576.  
 --- --- --- Area lights on timers or one photocell in central location next to circuit breakers or on rest room building.  
 --- --- --- Park regulation signs (our detail) at each Park entrance.  
 --- --- --- Park name sign (our detail) provided by developer.

Baseball Field:

--- --- --- Use Hollywood brand: (Contractor to install per our detail)  
                     Base anchors - BBP-44  
                     Homeplate - HPS  
                     Pitching - BBPB  
                     Bases - BBP  
 --- --- --- Check detail for infield - minimum 4" infield mix. Areas to slope away from infield (including pavement behind backstop).  
 --- --- --- Concrete under dugout.  
 --- --- --- Install 2"x 12" finished Pressure Treated Douglas Fir at base of fence on infield side of fence - 3 high behind home plate, 1 high along the rest of the fence.

Yes No N/A

Plant Material

--- --- --- Turf varieties shall be fine tall fescues, such as:  
 Olympic, Adventure, Jaguar, Falcon, Hound, Apache.  
 --- --- --- Irrigated meadows and slope situations shall be: hard  
 fescue (*festuca ovina* ssp. *duriuscula*) at a rate of:  
 seed = 220 lbs/acre (95% purity; 85% germination)  
 mulch = 1800 lbs/acre  
 R-binder = 60 lbs/acre  
 Fertilizer = 400 lbs/acre

--- --- --- Non irrigated erosion control.  
 --- --- --- The following erosion control mixture is to be used as the  
 City Standard for all non-irrigated hydro-seeded  
 applications (unless noted otherwise):

<u>BOTANICAL NAME</u> <u>(COMMON NAME)</u>	<u>MIN. %</u> <u>PURITY</u>	<u>MIN. %</u> <u>GERMINATION</u>	<u>LB/ACRE</u>
Festuca Meglura (Zorro Annual Fescue)	95%	85%	20
"Hycon" Rose Clover	90%	70%	20
Lupinus Nanus (Sky Lupine)	90%	70%	4
Eschscholtzia Californica (California Poppy)	90%	70%	4
Lobularia Maritima (Sweet Alyssum)	90%	70%	4

--- --- --- The erosion control materials shall be mixed and applied  
 in approximately the following proportions:

<u>MATERIAL</u>	<u>PER ACRE (SLOPE MEASUREMENT)</u>
Seed	52 Pounds
Wood Fibre Mulch	1800 Pounds
R Binder	60 Pounds
Fertilizer (20-20-10)	400 Pounds
Water	As Needed for Application

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## **Appendix G**

### **Resolution to Adopt the Urban Water Management Plan**

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**RESOLUTION NO. 2006/07**

**RESOLUTION OF THE CITY COUNCIL OF THE CITY OF ANTIOCH  
ADOPTING THE 2005 URBAN WATER MANAGEMENT PLAN**

**WHEREAS**, the Urban Water Management Planning Act requires every urban water supplier providing water for municipal purposes to more than 3,000 customers to adopt and submit a Urban Water Management Plan to the California Department of Water Resources every five years; and

**WHEREAS**, the City of Antioch is an urban water supplier providing water for municipal purposes to more than 29,800 customers; and

**WHEREAS**, the City of Antioch has prepared the required plan, allowed public review and held the appropriate Public Hearing;

**NOW, THEREFORE BE IT RESOLVED** by the City Council of the City of Antioch, that it does hereby adopt the 2005 update to the Urban Water Management Plan and authorizes City staff to submit the Plan to the Department of Water Resources

\* \* \* \* \*

**I HEREBY CERTIFY** that the foregoing resolution as passed and adopted by the City Council of the City of Antioch at a regular meeting thereof, held on the 10<sup>th</sup> day of January, 2006, by the following vote:

**AYES:** Council Member Davis, Kalinowski, Conley, Simonsen and Mayor Freitas

**NOES:** None

**ABSENT:** None

  
**L. JOLENE MARTIN, City Clerk**



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## **Appendix H**

### **References**

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## APPENDIX H

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# **Appendix E**

Responses to Comment Letters Received on the Draft IS/MND





April 5, 2010

Mindy Gentry, Associate Planner  
 Department of Community Development  
 City of Antioch  
 Third and "H" Streets  
 Antioch, CA 94509

**SUBJECT: Proposed Initial Study/Mitigated Negative Declaration  
 Northeast Antioch Area Reorganization**

Dear Mindy:

Thank you for including the Contra Costa Local Agency Formation Commission (LAFCO) in the environmental review process for the above project. We have reviewed the Draft Initial Study and Notice of Intent to Adopt a Mitigated Negative Declaration ("MND") for this project.

LAFCO's actions and decisions are guided by its own locally adopted policies and statutory requirements and procedures as set forth in the Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000 ("CKH", California Government Code §56000 et seq.). The CKH and local policies charge LAFCO with encouraging the orderly formation of local agencies and the logical and efficient extension of municipal services. And as a Responsible Agency, as defined in the California Environmental Quality Act (CEQA), LAFCO may need to rely on the City's MND in its consideration of any subsequent boundary change application [e.g., annexation, reorganization, etc.] relating to this project.

LAFCO is an independent agency with discretion to approve or disapprove, with or without amendment, wholly, partially or conditionally, changes of organization or reorganization. LAFCO is required to consider a variety of factors when evaluating a project, including, but not limited to, the proposed project's potential impacts on agricultural land and open space, the provision of municipal services, the timely and available supply of water, adequate and proximate affordable housing, etc..

With regard to the MND, we offer the following comments and questions:

- |   |   |     |
|---|---|-----|
| 1. Please correct the document to reflect Contra Costa County LAFCO (delete "County").  | } | 1.1 |
| 2. Page 5 provides a brief description of the power plant project and that it will undergo a separate environmental review. What is the status/timing of this separate environmental review process?  | } | 1.2 |
| 3. Page 10 notes that the city may seek approval from LAFCO for an out of agency service agreement to serve the Mirant Marsh Landing Generating Station. Would the City seek out of agency service from both DDSD and the City of Antioch? What is the anticipated timing of such a request to LAFCO? Please explain. | } | 1.3 |

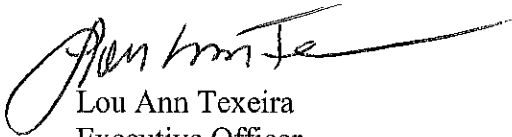


We acknowledge that the analysis contained in this document assumes no significant changes in or intensification of land uses or development beyond what would be permitted under current General Plan and zoning regulations, and recognizes that future development would be subject to additional environmental review.

Finally, we thank and commend the City of Antioch for taking a comprehensive approach to the Northeast Antioch area, and recognizing the critical service and boundary issues associated with Areas 1, 2a and 2b.

Thank you for your consideration of our comments. Please contact the LAFCO office if you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read "Lou Ann Texeira", with a long, sweeping horizontal line extending to the right.

Lou Ann Texeira  
Executive Officer

c: LAFCO Planner

## **RESPONSES TO COMMENTS**

### **Letter 1 – Local Agency Formation Commission**

#### **Response to comment 1.1**

Comment noted. The MND is revised on page 10 and page 54 to remove the word “County”

#### **Response to comment 1.2**

As noted in the Draft MND, the California Energy Commission (CEC) is currently processing an application by Mirant Marsh Landing, LLC, for certification to construct and operate a new power plant. A CEC staff assessment is expected to be issued for public review in April 2010. Following a 30-day public review period, the CEC will consider approval of the application based on the technical assessments prepared by staff and any public comments received. Hearings have not yet been scheduled but will likely be held in June 2010.

#### **Response to comment 1.3**

The City has initiated the annexation process for the area in question, which includes the site on which the Mirant Marsh Landing Power Plant is proposed. It is the City’s expectation that the annexation process will be completed well in advance of Mirant Marsh Landing Power Plant being approved, constructed, and in need of utility hook ups for operation. However, in the unlikely event that the annexation process is not finalized by the time Mirant Marsh Landing is in need of water and sewer connections, it is possible that the City will request from LAFCO an Out of Agency Agreement to provide such services for Mirant Marsh Landing until such time as the annexation is completed. Any such request for an Out of Agency Agreement by the City would also include Delta Diablo Sanitation District along with the City of Antioch. The City currently has a similar Out of Agency Agreement with PG&E for the Gateway Power Plant, which is located adjacent to the site on which the Mirant Marsh Landing Facility is proposed.





## Delta Diablo Sanitation District

OFFICE AND TREATMENT PLANT: 2500 PITTSBURG-ANTIOCH HIGHWAY, ANTIOCH, CA 94509-1373  
 TEL.: (925) 756-1900 ADMIN. FAX: (925) 756-1961 MAINT. FAX: (925) 756-1963 OPER. FAX: (925) 756-1962 TECH. SVCS. FAX: (925) 756-1960  
 www.ddsd.org

April 5, 2010

Ms. Mindy Gentry, Associate Planner  
 Economic Development Department  
 City of Antioch  
 P.O. Box 5007  
 Antioch, CA 94531

SUBJECT: NORTHEAST ANNEXATION DRAFT MITIGATED NEGATIVE  
 DECLARATION

Dear Ms. Gentry:

Thank you for providing the District with the opportunity to review the subject Draft Mitigated Negative Declaration. The draft study includes a review of the potential environmental impacts for the proposed reorganization (annexation) of three subareas totaling 678 acres into both the City of Antioch (City) and the Delta Diablo Sanitation District (District). As noted by the study, subarea 1 is an approximately 481 acre area predominantly occupied by heavy industrial uses and generally located south of the San Joaquin River, west of State Route 160, and north of the BNSF railroad. Subarea 2a is a 94 acre area currently occupied primarily by storage and marina and located between Area 1 and the Antioch Bridge (State Route 160). Area 2b is approximately 103 acres located south of Wilbur Avenue in the vicinity of Viera Avenue. Area 2b currently contains 120 existing residential uses that are served primarily by well water and private septic systems. The subareas, Area 1; Area 2a; and area 2b are located within the sphere of influence of the City and the District.

The following summarizes our comments/concerns related to recycled water, wastewater conveyance through District facilities, and wastewater treatment.

### Wastewater Conveyance and Treatment

The existing DDS D sewer forcemain shown conceptually in Figure 6 consists of two separate sewer forcemains. One District sewer forcemain is 24 inches in diameter and the second forcemain is 14 inches in diameter. The 14 inch diameter forcemain joins with the 24 inch diameter force main just east of the Wilbur Avenue Bridge overcrossing of BNSF railroad. Both forcemains are necessary for conveyance of projected buildout flows from Bridgehead Pump Station. The pipeline corridor within the Wilbur Avenue public right of way is congested as it accommodates not only the two existing DDS D forcemains but also a number of gas transmission mains as well as a potable water transmission main. Page 9 of the draft mitigated negative declaration correctly identifies the need to obtain additional right of way along Wilbur Avenue not only for traffic, but also for future utility purposes.

It should be clarified on page 54 of the study that portions of the proposed reorganization area will have sewage flows routed through the DDS D Antioch Pump Station rather than the DDS D Bridgehead Pump Station. The conceptual sewer plan shown in Figure 7 is inconsistent with

2.1

draft District master plans for sewage flow routing of a portion of area 1 and a portion of area 2b in that portions are planned/ modeled as flowing directly to the District's Antioch Pump Station facility located on Fulton Shipyard Road to the west rather than as depicted to the Bridgehead Pump Station to the east. Attached is a District staff markup of Figure 6 delineating the areas currently programmed in District hydraulic models as tributary to Bridgehead Pump Station. It is recommended that the conceptual illustration of the 15 inch sewer in Wilbur west of Viera Avenue and the 8 inch sewer in East 18<sup>th</sup> Street west of Viera Avenue be revised to illustrate an alternate routing of flows through new City trunk lines in the westerly direction so that it is consistent with current District planning. If the western routing is determined to be undesirable to the City, the District is open to performing a special hydraulic review at the time of City trunk line predesign for the areas west of Viera Avenue. It is our understanding that it will be several years or more before funding for all the City sewer trunk lines identified in the Mitigated Negative Declaration is available and that the City will perform the necessary project-level environmental review of pipeline/utility construction impacts once more detailed plans for these facilities are developed.

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(cont.)

#### Recycled Water

Delta Diablo Sanitation District (DDSD) and the City of Antioch are working jointly to complete construction of a recycled water transmission main which will supply recycled water to the City of Antioch for various municipal parks and the Lone Tree Golf Course. This pipeline is sized to provide for future recycled water demands, including possible industrial recycled water use in the proposed reorganization area. The ability of DDSD to provide recycled water to the proposed reorganization area is dependent on a detailed evaluation of the demands, as well as a hydraulic analysis of the transmission and associated distribution system

2.2

If you have any questions, or need further clarification, please feel free to contact me at (925) 756-1939.

Sincerely,



Patricia Chapman  
Associate Engineer

PC:cg

Enclosure

cc: Phil Harrington, City of Antioch  
Victor Carneglia, City of Antioch  
Caroline Quinn, Engineering Services Director, DDSD  
Dean Eckerson, Principal Engineer, DDSD  
Amanda Roa, Environmental Compliance Engineer, DDSD  
DEV.03-DEVDOC-818  
Chron File



DDSD Markup - 4/5/10

Area Tributary to Bridgehead Pump Station



## **RESPONSES TO COMMENTS**

### **Letter 2 – Delta Diablo Sanitation District**

#### **Response to comment 2.1**

Comment noted. Figure 7 of the MND is revised to more accurately reflect future planning for waste water treatment in the proposed annexation area.

#### **Response to comment 2.2**

Comment noted.