5 STATUTORILY REQUIRED SECTIONS

5.1 INTRODUCTION

The Statutorily Required Sections chapter of the EIR includes brief discussions regarding those topics that are required to be included in an EIR, pursuant to *CEQA Guidelines*, Section 15126.2. The chapter includes a discussion of the proposed project's potential to induce economic or population growth. In addition, the chapter includes lists of cumulative impacts, energy impacts, significant irreversible environmental changes, and significant and unavoidable impacts caused by the proposed project.

5.2 GROWTH-INDUCING IMPACTS

An EIR must discuss the ways in which a proposed project could foster economic or population growth in the vicinity of the project and how that growth would, in turn, affect the surrounding environment (see *CEQA Guidelines,* Section 15126.2[d]). Growth can be induced in a number of ways, including through the elimination of obstacles to growth or through the stimulation of economic activity within the region. The discussion of the removal of obstacles to growth relates directly to the removal of infrastructure limitations or regulatory constraints that could result in growth unforeseen at the time of project approval.

A number of issues must be considered when assessing the growth-inducing effects of development plans, such as the proposed project, including the following:

> **Elimination of Obstacles to Growth:** The extent to which infrastructure capacity provided to accommodate the proposed project would allow additional development in surrounding areas; and
>
> **Economic Effects**: The extent to which development of the proposed project could cause increased activity in the local or regional economy.

Growth-inducing impacts associated with the proposed project would be considered to be any effects of the project allowing for additional growth or increases in population beyond that proposed by the project or anticipated in the City's General Plan.

As discussed in Chapter 4.9, Land Use and Planning/Population and Housing, of this EIR, both the Multigenerational Plan and the Traditional Plan propose development of residential and commercial land uses, and, thus, have the potential to induce population growth. Specifically, the Multi-Generational Plan could provide housing for up to approximately 4,117 people (1,307 proposed households X 3.15 persons per household = 4,117 new residents), while the Traditional plan could provide housing for up to approximately 3,582 people (1,137 proposed households X 3.15 persons per household = 3,582 new residents). Thus, the Traditional Plan would result in

similar levels of population growth as the Multi-Generational Plan. It should be noted that the Multi-Generational Plan includes approximately 500 active adult units, which would be anticipated to accommodate fewer occupants per unit than market-rate single-family housing. Thus, the discussion presented in this section represents a conservative scenario.

The Antioch General Plan enables residential growth, and identifies the necessary infrastructure improvements, including roads, utilities, and government services that would support future growth. Specifically, the Antioch General Plan planned for single-family residential development, senior housing, a golf course, and open space uses within the project site. The new residences provided by the proposed project would fall within ABAG's growth estimates for the City of Antioch. In addition, the proposed project would be within the maximum number of dwelling units of 4,000 envisioned by the City for the Sand Creek Focus Area. Thus, the type and intensity of the proposed development would be consistent with what has been previously anticipated for the site by the City. Furthermore, as discussed in Chapter 4.11, Public Services, Recreation, and Utilities, of this EIR, the proposed project's impacts related to public services and utilities would be less than significant.

A physical obstacle to growth typically involves the lack of public service infrastructure. The extension of public service infrastructure, including roadways, water mains, and sewer lines, into areas that are not currently provided with these services, would be expected to support new development. Similarly, the elimination or change to a regulatory obstacle, including existing growth and development policies, could result in new growth. The primary infrastructure systems included as part of the proposed project would be sized based on the growth anticipated for the Sand Creek Focus Area per the City's General Plan and the City's utility master plans, specifically, the construction of Sand Creek Road to the west that would connect to the existing terminus of Deer Valley Road and the existing terminus of Dallas Ranch Road. Therefore, the proposed project would not be expected to generate any new growth-inducing impacts beyond impacts identified in this EIR as impacts of the project.

5.3 Cumulative Impacts

CEQA Guidelines, Section 15130 requires that an EIR discuss the cumulative and long-term effects of the proposed project that adversely affect the environment. "Cumulative impacts" are defined as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts" (*CEQA Guidelines*, Section 15355). "[I]ndividual effects may be changes resulting from a single project or a number of separate projects" (*CEQA Guidelines*, Section 15355, subd. [a]). "The cumulative impact from several projects is the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time" (*CEQA Guidelines*, Section 15355, subd. [b]).

The need for cumulative impact assessment reflects the fact that, although a project may cause an "individually limited" or "individually minor" incremental impact that, by itself, is not significant, the increment may be "cumulatively considerable," and, thus, significant, when viewed together with environmental changes anticipated from past, present, and probable future projects (*CEQA*

Guidelines, Section 15064, subd. [h(1)], Section 15065, subd. [c], and Section 15355, subd. [b]). Accordingly, particular impacts may be less than significant on a project-specific basis but significant on a cumulative basis if their small incremental contribution, viewed against the larger backdrop, is cumulatively considerable. However, it should be noted that *CEQA Guidelines*, Section 15064, Subdivision (h)(5) states, "[…]the mere existence of significant cumulative impacts caused by other projects alone shall not constitute substantial evidence that the proposed project's incremental effects are cumulatively considerable." Therefore, even where cumulative impacts are significant, any level of incremental contribution is not necessarily deemed cumulatively considerable.

Section 15130(b) of *CEQA Guidelines* indicates that the level of detail of the cumulative analysis need not be as great as for the project impact analyses, but that analysis should reflect the severity of the impacts and their likelihood of occurrence, and that the analysis should be focused, practical, and reasonable. To be adequate, a discussion of cumulative effects must include the following elements:

> (1) Either (a) a list of past, present and probable future projects, including, if necessary, those outside the agency's control, or (b) a summary of projections contained in an adopted general plan or related planning document, or in a prior certified EIR, which described or evaluated regional or area-wide conditions contributing to the cumulative impact, provide that such documents are reference and made available for public inspection at a specified location;
>
> (2) A summary of the individual projects' environmental effects, with specific reference to additional information and stating where such information is available; and
>
> (3) A reasonable analysis of all of the relevant projects' cumulative impacts, with an examination of reasonable, feasible options for mitigating or avoiding the project's contribution to such effects (Section 15130[b]).

For some projects, the only feasible mitigation measures will involve the adoption of ordinances or regulations, rather than the imposition of conditions on a project-by-project basis (Section 15130[c]). Section 15130(a)(3) states that an EIR may determine that a project's contribution to a significant cumulative impact will be rendered less than cumulatively considerable, and thus not significant, if a project is required to implement or fund the project's fair share of a mitigation measure or measures designed to alleviate the cumulative impact.

Cumulative Setting

The lead agency should define the relevant geographic area of inquiry for each impact category (id., Section 15130, subd. [b][3]), and should then identify the universe of "past, present, and probable future projects producing related or cumulative impacts" relevant to the various categories, either through the preparation of a "list" of such projects or through the use of "a summary of projections contained in an adopted general plan or related planning document, or in a prior environmental document which has been adopted or certified, which described or evaluated regional or area wide conditions contributing to the cumulative impact" (id., subd. [b][1]).

The proposed project, in conjunction with development in the vicinity of the project site and within the region, would contribute to cumulative environmental impacts. The cumulative analysis for the proposed project is based on buildout of the City's General Plan, the development included in the most recent Contra Costa County Travel Demand Model (CCTA Model), as well as present and probable future projects within the region. The latest *City of Brentwood Project Status Report* (April 1, 2017 for commercial projects and July 1, 2017 for residential projects) and *City of Antioch Project Pipeline* (as of September 6, 2017), at the time the project's Notice of Preparation (NOP) was issued, were reviewed to identify developments that could be constructed and occupied in the area over the next five to 10 years. The reasonably probable future development projects are summarized in Table 5-1 and the locations are shown on Figure 5-1.

Cumulative impacts are analyzed in each of the technical chapters of this EIR (Chapters 4.1 through 4.12). Chapter 4.12, Transportation and Circulation, of this EIR, includes a list of future intersection and roadway improvements included in the cumulative traffic analysis.

5.4 ENERGY CONSERVATION

In order to ensure energy implications are considered in project decisions, Appendix F of CEQA Guidelines requires a discussion of the potential energy impacts of projects, with particular emphasis on avoiding or reducing inefficient, wasteful, and unnecessary consumption of energy. The goal of conserving energy implies the wise and efficient use of energy. The means of achieving this goal include:

(1) Decreasing overall per capita energy consumption;
(2) Decreasing reliance on fossil fuels such as coal, natural gas and oil; and
(3) Increasing reliance on renewable energy sources.

The main forms of available energy supply are electricity, natural gas, and oil. A description of the 2016 California Green Building Standards Code, with which the proposed project would be required to comply, as well as discussions regarding the proposed project's potential effects related to each form of energy supply during construction and operations is provided below.

California Green Building Standards Code

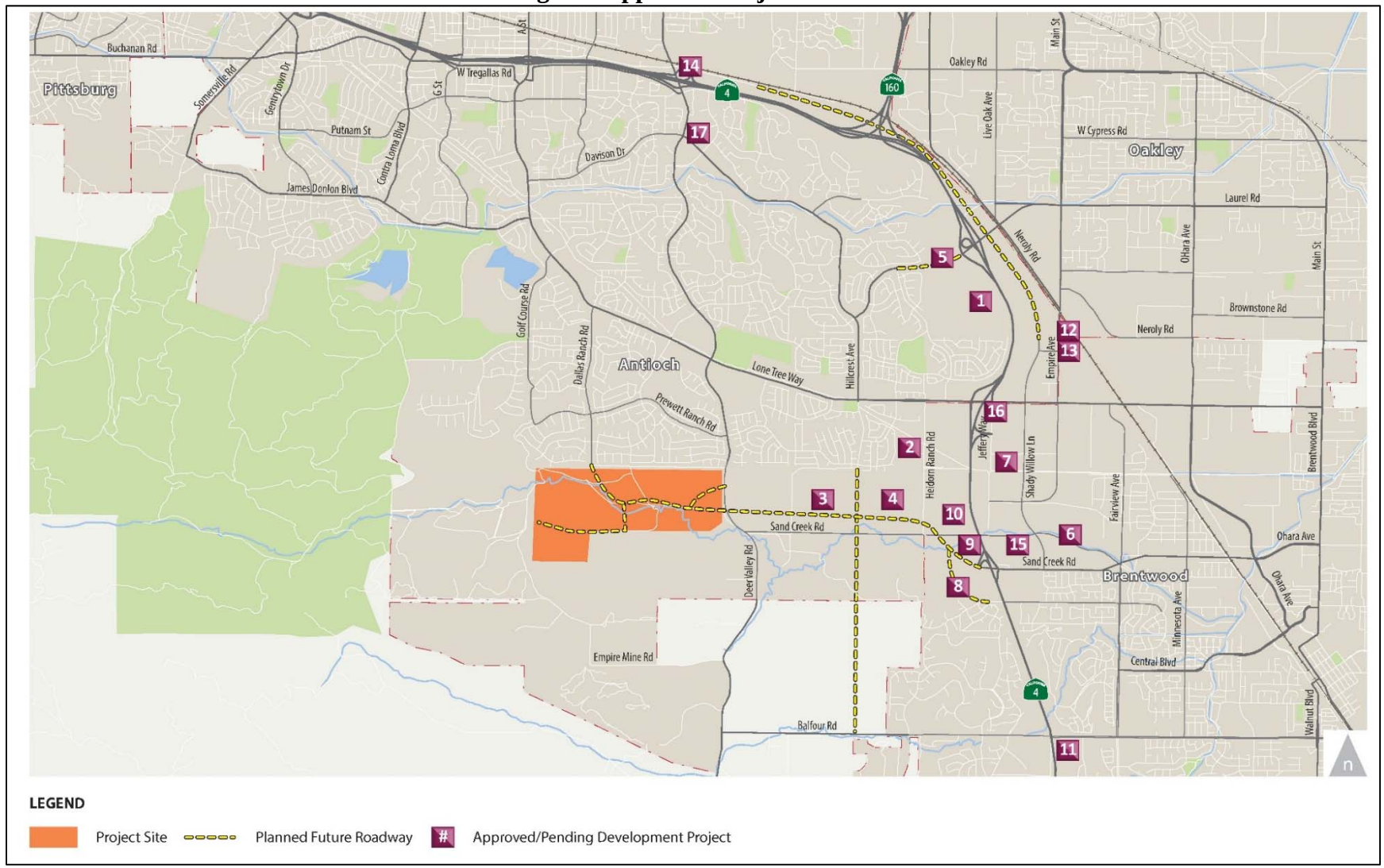
The 2016 California Green Building Standards Code, otherwise known as the CALGreen Code (CCR Title 24, Part 11), became effective January 1, 2017. The purpose of the CALGreen Code is to improve public health, safety, and general welfare by enhancing the design and construction of buildings through the use of building concepts having a reduced negative impact or positive environmental impact and encouraging sustainable construction practices. The provisions of the code apply to the planning, design, operation, construction, use, and occupancy of every newly constructed building or structure throughout California.

Table 5-1
Pending and Approved Projects Under Cumulative Conditions

Map Location	Project Name	Size	Land Use	Status
1	Park Ridge	525 dwelling units	Single Family Homes	Approved, under construction
2	Heidorn Village	117 dwelling units	Single Family Homes	Approved
3	Aviano	533 dwelling units	Single Family Homes	Approved
4	Vineyard at Sand Creek	641 dwelling units	Single Family Homes	Approved
5	Laurel Ranch	178 dwelling units	Single Family Homes	Approved
6	Parkside Villas	37 dwelling units	Single Family Homes	Approved
7	Amber Meadows	69 dwelling units, 126 dwelling units	Single Family Homes Apartments	Pending
8	Bridle Gate Residential Elementary School	265 dwelling units, 700 students	Single Family Homes Elementary School	Pending
9	Bridle Gate Commercial	150,000 square feet	Shopping Center	Pending
10	The Enclave	258 dwelling units	Apartments	Pending
11	Brentwood County Club	63 dwelling units	Detached Active Adult	Approved
12	Orfanos	160 dwelling units	Single Family Homes	Approved
13	Alvarez Partners	48 dwelling units	Single Family Homes	Approved
14	eBART Station		Train Station	Under Construction
15	Streets of Brentwood	320 dwelling units, 32,000 square feet	Apartments Shopping Center	Pending
16	Jeffery Way Retail	54,000 square feet	Shopping Center	Pending
17	Wildflower Station	22 single-family 98 Condos 10-acres commercial	Mixed-Use	Pending

Source: Fehr & Peers, 2018.

Figure 5-1
Pending and Approved Projects Locations



Source: Fehr & Peers, 2018.

Building Energy Efficiency Standards

The 2016 Building Energy Efficiency Standards is a portion of the California Building Standards Code (CBSC), which expands upon energy efficiency measures from the 2013 Building Energy Efficiency Standards resulting in an approximately 28 percent reduction in energy consumption from the 2013 standards for residential structures and an approximately five percent reduction for non-residential structures. Energy reductions relative to previous Building Energy Efficiency Standards would be achieved through various regulations including requirements for the use of high efficacy lighting, improved water heating system efficiency, and high-performance attics and walls.

Construction Energy Use – Multi-Generational and Traditional Plans

Appendix F of the CEQA Guidelines identifies several potential sources of energy conservation impacts, including the project's construction energy requirements and energy use efficiencies by amount and fuel type. Construction of the proposed project would result in a temporary increase in energy consumption in the area. As discussed in Chapter 3, Project Description, of this EIR, two development scenarios for the proposed project are currently being considered (Multi-Generational Plan and Traditional Plan). However, the two scenarios would result in a similar development area and would involve similar land uses. Considering the similarities between the scenarios, energy use during construction activities from both scenarios are considered below.

As discussed in Section 4.3, Air Quality and Greenhouse Gas Emissions, of this EIR, Phase III of the project would involve the greatest number of units and disturb the greatest number of acres. As such, energy use would be most intensive during Phase III. Phase III is assumed to commence in May of 2026 (versus 2018 for Phase I) and occur over approximately six years. Even during the most intense year of construction, due to the different types of construction activities (e.g., demolition, site preparation, building construction), only portions of the site would be disturbed at a time, with operation of construction equipment occurring at different locations on the project site, rather than a single location.

In addition, all construction equipment and operation thereof would be regulated per the California Air Resources Board (CARB) In-Use Off-Road Diesel Vehicle Regulation, which includes measures to reduce emissions from vehicles by subjecting fleet owners to retrofit or accelerated replacement/repower requirements, imposing idling limitations on owners, operators, renters, or lessees of off-road diesel vehicles. Project construction would also be required to implement all of the Basic Construction Mitigation Measures provided in the BAAQMD CEQA Guidelines, which include limits on idling times and requirements related to construction equipment maintenance and upkeep. As a result, construction equipment operating at the project site would occur over a relatively short duration in comparison to the operational lifetime of the proposed project, and would operate intermittently over the construction period for the project.

The CARB is currently drafting an update to the State's Climate Change Scoping Plan *(The 2017 Climate Change Scoping Plan Update)*,[1] which builds upon previous efforts to reduce greenhouse

[1] California Air Resources Board. *The 2017 Climate Change Scoping Plan Update.* January 20, 2017.

gas (GHG) emissions and is designed to continue to shift the California economy away from dependence on fossil fuels. Appendix B of the 2017 Scoping Plan includes examples of local actions (municipal code changes, zoning changes, policy directions, and mitigation measures) that would support the State's climate goals. The examples provided include, but are not limited to, enforcing idling time restrictions for construction vehicles, utilizing existing grid power for electric energy rather than operating temporary gasoline/diesel-powered generators, and increasing use of electric and renewable fuel-powered construction equipment. Required compliance with the CARB In-Use Off-Road Diesel Vehicle Regulation as well as BAAQMD Basic Construction Mitigation Measures would help to ensure that the project would be consistent with the intention of the 2017 Scoping Plan and the recommended actions included in Appendix B of the 2017 Scoping Plan.

Nonetheless, construction associated with buildout of the project site would involve on-site energy demand and consumption related to use of oil in the form of gasoline and diesel fuel for construction worker vehicle trips, hauling and materials delivery truck trips, and operation of off-road construction equipment. In addition, diesel-fueled portable generators may be necessary to provide additional electricity demands for temporary on-site lighting, welding, and for supplying energy to areas of the site where energy supply cannot be met by way of a hookup to the existing electricity grid. Project construction would not involve the use of natural gas appliances or equipment. Construction activity would be limited to the hours of 7:00 AM to 6:00 PM, Monday through Friday, and 9:00 AM to 5:00 PM on weekends and holidays per Section 5-17.04 of the City's Municipal Code.

Electricity Demand During Construction

Typically, at construction sites, electricity from the existing grid is used to power portable and temporary lights or office trailers. Because grid electricity would be utilized primarily for steady sources such as lighting, not sudden, intermittent sources such as welding or other hand-held tools, the increase in electricity usage at the site during construction would not be expected to cause any substantial peaks in demand. However, the base demand for electricity in the area would increase.

The proposed project is anticipated to be built out over multiple phases, one-by-one, where only portions of the project site would be developed at a time, with periods of non-construction between phases. Operation of construction equipment is regulated by federal, State, and local standards, including BAAQMD rules and regulations and the CARB In-Use Off-Road Diesel Vehicle Regulation. Overall, construction equipment operating at the project site would occur over a relatively short duration in comparison to the operational lifetime of the proposed project, and would operate intermittently over the construction period for the project. As the site develops, operational electricity demand would become the dominant demand source. Operational electricity demand would be much greater than construction, and is discussed in further detail below.

Based on the above, construction of the proposed project would not cause a permanent or substantial increase in demand that would exceed the demand projections or such that the existing PG&E supplies or infrastructure could not handle the increase. Therefore, project construction would not result in any significant impacts on local or regional electricity supplies, the need for additional capacity, or on peak or base period electricity demands. As such, the temporary increase

in electricity due to project construction activities would not be considered an inefficient, wasteful, and unnecessary consumption of energy, and significant adverse impacts on electricity resources would not occur.

Oil Demand During Construction

Worker, delivery, and hauling vehicle trips would be generated during buildout of the project site. Worker vehicle trips are assumed to utilize gasoline, and delivery and hauling trucks are assumed to utilize diesel fuel. Diesel fuel would also be used to power the construction and off-road equipment necessary for construction activities, including rubber tired dozers, tractors, excavators, cranes, and other types of equipment. In addition, diesel-fueled portable generators may be used where electricity from the grid cannot be provided or for where more immediate electricity is needed such as for welding or other hand tools. Overall, construction equipment operating at the project site would occur over a relatively short duration in comparison to the operational lifetime of future residential homes and commercial development within the project site and would be intermittent over the period of construction for the project. Operational oil demand would be much greater than construction oil demand, and is discussed further below.

A number of federal, State, and local standards and regulations exist that require improvements in vehicle efficiency, fuel economy, cleaner-burning engines, and emissions reductions. For example, as noted above, CARB has adopted the In-Use Off-Road Diesel Vehicle Regulation, which is intended to reduce emissions from in-use, off-road, heavy-duty diesel vehicles in California by imposing limits on idling, requiring all vehicles to be reported to CARB, restricting the addition of older vehicles into fleets, and requiring fleets to reduce emissions by retiring, replacing, or repowering older engines, or installing exhaust retrofits. The In-Use Off-Road Diesel Vehicle Regulation would subsequently help to improve fuel efficiency and reduce GHG emissions. Any licensed contractor for the project and equipment would have to be in compliance with all applicable regulations, such as the In-Use Off-Road Diesel Vehicle Regulation. Thus, the proposed project would comply with existing standards related to construction fuel efficiency. Technological innovations and more stringent standards are being researched, such as multi-function equipment, hybrid equipment, or other design changes, which could help to reduce demand on oil and emissions associated with construction.

Overall, the temporary increase in gasoline and diesel consumption due to project construction activities would not be an inefficient, wasteful, and unnecessary consumption of energy, and significant adverse impacts on oil resources would not occur.

Conclusion

Construction of Phases I, II, and III of the proposed project would result in a temporary increase in demand for energy resources. However, the temporary increase would not result in a significant increase in peak or base demands or require additional capacity from local or regional energy supplies. In addition, the proposed project would be required to comply with all applicable regulations related to energy conservation and fuel efficiency, which would help to reduce the temporary increase in demand. As such, the project would not result in an inefficient, wasteful,

and unnecessary consumption of energy. Therefore, buildout of the project site would result in a less-than-significant impact on energy resources during construction.

Operational Energy Use – Multi-Generational and Traditional Plans

In order to ensure energy implications are considered in project decisions, Appendix F of the CEQA Guidelines requires a discussion of the potential energy impacts of a project, with particular emphasis on avoiding or reducing inefficient, wasteful, and unnecessary consumption of energy. Appendix F identifies several potential methods of evaluating a project's energy use, which are listed as follows and discussed in further detail below, with the exception of the project's construction-related energy requirements and energy use efficiencies, which are discussed above:

- The project's energy requirements and energy use efficiencies by amount and fuel type for each stage of the project including construction, operation, maintenance and/or removal.
- The effects of the project on local and regional energy supplies and on requirements for additional capacity.
- The effects of the project on peak and base period demands for electricity and other forms of energy.
- The degree to which the project complies with existing energy standards.
- The effects of the project on energy resources.
- The project's projected transportation energy use requirements and its overall use of efficient transportation alternatives.

As noted above, both the Multi-Generational Plan and the Traditional Plan would result in a similar development area and would involve similar land uses. Considering the similarities between the scenarios, energy use during construction activities from both scenarios are considered below. Where applicable, energy use associated with each development scenario is discussed separately.

Building Energy

With the exception of a cattle-grazing operation, a single-family residence, and various barns and outbuildings located on the eastern portion of the site, the project site is currently vacant and undeveloped. Electricity and natural gas are currently provided to the project site by PG&E. In 2016, approximately 70 percent of PG&E's delivered electricity was derived from renewable energy and GHG-free energy sources such as non-emitting nuclear generation, hydroelectric facilities, wind power, natural gas, and various other sources.[2] In 2015, PG&E reported 9,391 million kilowatt-hours (kWh) of total electricity consumption,[3] and 1087.41 million (MM) therms

[2] Pacific Gas and Electric Company. *Delivering low-emission energy*. Available at: https://www.pge.com/en_US/about-pge/environment/what-we-are-doing/clean-energy-solutions/clean-energy-solutions.page. Accessed October 2017.

[3] California Energy Commission, Energy Consumption Data Management System. *California Energy Consumption Database*. Available at: http://ecdms.energy.ca.gov/. Accessed October 2017.

of natural gas.[4] Approximately 2,797 kWh of electricity consumption and 153 million (MM) therms of natural gas consumption was associated with residential land uses.

As discussed in Chapter 4.11, Public Services, Recreation, and Utilities, of this EIR, the project site is located within PG&E's Delta Distribution Planning Area (DPA), which covers the southern and eastern portions of the City of Antioch. Electricity distribution facilities are located throughout the DPA, with no one set of facilities dedicated to serving the City. On October 31, 2008, PG&E completed construction of a new distribution substation in Antioch, located approximately one-half mile south of the Hillcrest Avenue/Prewett Ranch Drive intersection.[5] The Antioch substation improves the reliability and safety of electric services to southern Antioch. Upon buildout of the project site, electricity to the project site would be provided by PG&E. All electricity infrastructure would be located underground, and would tie-in to existing infrastructure located at the terminus of Dallas Ranch Road and an existing substation located approximately one-half mile south of the existing Hillcrest Avenue/Prewett Ranch Drive intersection. Natural gas service would also be provided by PG&E by way of a joint trench that would accommodate all of the gas facilities within the proposed project site. An existing four- to six-inch transmission main runs along Deer Valley Road, and another four- to six-inch transmission main runs down the middle of Dallas Ranch Road. Each of these mains would be extended into the proposed project site. The existing PG&E infrastructure and supply for the area is expected to be sufficient to handle the proposed project's increase in demand for electricity and natural gas.

The maximum buildout for the proposed project site would be 1,307 dwelling units and up to 54,000 sf of neighborhood commercial, office, and retail space for the Village Center area. Energy use associated with operation of the proposed project would be typical of residential uses, requiring electricity and natural gas for interior and exterior building lighting, heating, ventilation, and air conditioning (HVAC), electronic equipment, machinery, refrigeration, appliances, security systems, and more. In addition, maintenance activities during operations, such as landscape maintenance, would involve the use of electric or gas-powered equipment.

Electricity and natural gas demand associated with the proposed project were estimated using California Emissions Estimator Model (CalEEMod). Operational energy use associated with both the Multi-Generational and Traditional Plans based on CalEEMod outputs is summarized in Table 5-2 below. As shown in the table, operation of the Multi-Generational Plan would involve a slightly greater demand for electricity and natural gas compared to the Traditional Plan.

Based on the above, both the Multi-Generational and Traditional Plans would result in a substantial increase in demand for electricity and natural gas during operation. However, increased energy and natural gas demand does not necessarily mean that a project would have an impact related to energy resources. According to Appendix F of the CEQA Guidelines, a proposed project would result in an impact related to energy resources if a project would result in the inefficient use or waste of energy.

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4 California Energy Commission, Energy Consumption Data Management System. *California Energy Consumption Database*. Available at: http://ecdms.energy.ca.gov/. Accessed October 2017.

5 State of California Public Utilities. *Pacific Gas & Electric Company's Delta DPA Capacity Increase Substation Project*. Available at: http://www.cpuc.ca.gov/environment/info/aspen/deltasub/deltasub.htm. Accessed July 2017.

Table 5-2
Operational Electricity and Natural Gas Use

Resource Type	Multi-Generational Plan	Traditional Plan	Net Difference
Electricity Use (kWh/yr)	11,305,302	9,929,873	+1,375,429
Natural Gas Use (kBTU/yr)	38,214,300	33,273,200	+4,941,100

Source: CalEEMod, October 2017 (see Appendix C).

Structures included in the proposed project would be subject to all relevant provisions of the 2016 update of the CBSC, including the Building Energy Efficiency Standards and the Tier 1 provisions of the CALGreen Code. Adherence to the most recent CALGreen and the Building Energy Efficiency Standards would ensure that the proposed structures would consume energy efficiently through the incorporation of such features as efficient water heating systems, high performance attics and walls, and high efficacy lighting. Therefore, while the proposed project would result in increased electricity and natural gas demand, the electricity and natural gas would be consumed more efficiently, and would be typical of residential development. Furthermore, future updates to the CBSC will likely provide increasingly stringent efficiency standards, and structures built in compliance with future CBSC would be increasingly more energy efficient.

In addition, the project would include the adoption of design guidelines, including guidelines related to sustainability. Specifically, the design guidelines would encourage the use of "cool pavement" and "cool roofing" materials whenever feasible, installation of solid-state outdoor LED technology or similar energy efficient light bulbs, sustainable landscaping and outdoor watering features, installation of high-efficiency appliances in all residences, and a wide variety of other measures. The sustainability features included in the proposed design guidelines would be applied during the City's review of future development proposals within the project site.

Based on the above, given the project's required compliance with CALGreen and the Building Energy Efficiency Standards, as well as implementation of the proposed design guidelines, the proposed project would not result in the inefficient or wasteful consumption of electricity or natural gas.

Transportation Energy

The annual VMT at full buildout of the proposed project is anticipated to be approximately 24,369,979 for the Multi-Generational Plan and 27,174,009 for the Traditional Plan based on CalEEMod outputs for the project (see Appendix D). The average fuel economy in miles per gallon (mpg) for the U.S. car (24.9 mpg) and light truck (18.5 mpg) fleet, which each make up 50 percent of new light vehicle sales in the U.S., was obtained from the *Transportation Energy Data Book*. Using the aforementioned data, the overall average fuel economy of the U.S. vehicle fleet was calculated to be 21.7 mpg.

Based on an overall average fuel economy of 21.7 mpg and anticipated trip generation, buildout of the Multi-Generational Plan would be expected to result in an increased consumption of approximately 512.80 barrels of gasoline per week. California inventories of gasoline averaged

10.6 million barrels in 2016, similar to 2015 levels.[6] As such, the proposed project at full buildout would be expected to result in an increased demand of a maximum of approximately 0.00484 percent of the State's current inventory of gasoline.

Using the same assumptions discussed above, buildout of the Traditional Plan would be expected to resulting in an increased consumption of approximately 571.81 barrels of gasoline per week resulting in an increased demand of approximately 0.00539 percent of the State's current inventory of gasoline. It should be noted that a portion of the trips associated with the proposed project would not necessarily be new trips. Rather, some trips would be redistributed as residents from other areas relocate to the project site. As such, energy consumption associated with project VMT would not be unique to the project.

California leads the nation in registered alternatively-fueled and hybrid vehicles. In addition, State-specific regulations encourage fuel efficiency and reduction of dependence on oil. Improvements in vehicle efficiency and fuel economy standards help to reduce consumption of gasoline and reduce the State's dependence on petroleum products. The proposed project would be required to comply with all applicable regulations associated with vehicle efficiency and fuel economy. In addition, the design guidelines that would be adopted with the approval of the proposed project would include various measures to reduce transportation-related energy use, including, but not limited to, improvements in transit connectivity and access, provision of dedicated bike and pedestrian paths, pre-wiring of all future residences for future solar panel installation, and provision of a site-wide electrical system capable of accommodating increased electrical loads associated with Level 2 Electric Vehicle (EV) charging in each residence. The design guidelines would require at least three percent of the total number of parking spaces within the proposed Village Center area to be pre-wired to support Level 2 electric vehicle supply equipment (EVSE) capable of supporting future EV charging, consistent with CALGreen Nonresidential Tier 1 Voluntary Measures. Such measures would help to discourage driving and reduce vehicle trips generated during operation. Based on the above, the proposed project would not be considered to result in the inefficient or wasteful consumption of transportation energy.

Conclusion

As discussed above, buildout of the proposed project site would involve an increase in energy consumption. However, the proposed project would comply with all applicable standards and regulations regarding energy conservation and fuel efficiency, which would ensure that the future uses would be designed to be energy efficient to the maximum extent practicable. Accordingly, the proposed project would not be considered to result in a wasteful, inefficient, or unnecessary usage of energy, and impacts related to operational energy would be considered less than significant.

[6] California Energy Commission. *Petroleum Watch*. February 2015. Available at: http://www.energy.ca.gov/almanac/petroleum_data/petroleum_watch/2017_Petroleum_Watch/2017-01_Petroleum_Watch.pdf. Accessed February 15, 2017.

5.5 Significant Irreversible Environmental Changes

The State CEQA Guidelines mandate that an EIR address any significant irreversible environmental changes that would result if the proposed project were implemented (CEQA Guidelines, Section 15126.2[c]). An impact would fall into this category if any of the following would occur:

- The project would involve a large commitment of nonrenewable resources;
- The primary and secondary impacts of a project would generally commit future generations to similar uses (e.g., a highway provides access to a previously remote area);
- The project involves uses in which irreversible damage could result from any potential environmental accidents associated with the project; or
- The phasing of the proposed consumption of resources is not justified (e.g., the project involves a wasteful use of energy).

The proposed project would likely result in, or contribute to, the following significant irreversible environmental changes:

- Conversion of currently undeveloped land to urban land uses;
- Placement and/or extension of roadways in areas providing access to the proposed project and connecting to adjacent developments;
- Irreversible consumption of goods and services associated with the future population; and
- Irreversible consumption of energy and natural resources associated with the future population.

5.6 Significant and Unavoidable Impacts

According to CEQA Guidelines, an EIR must include a description of those impacts identified as significant and unavoidable should the proposed action be implemented (CEQA Guidelines §15126.2[b]). Such impacts would be considered unavoidable when the determination is made that either mitigation is not feasible or only partial mitigation is feasible such that the impact is not reduced to a level that is less-than-significant. This section identifies significant impacts that could not be eliminated or reduced to a less-than-significant level by mitigations imposed by the City. The final determination of the significance of impacts and the feasibility of mitigation measures would be made by the City as part of the City's certification action. The significant and unavoidable impacts of the proposed project are listed below.

4.1-3 Substantially degrade the existing visual character or quality of the project site and/or the site's surroundings. Based on the analysis, even with mitigation, the impact is *significant and unavoidable*.

4.1-5 Long-term changes in visual character of the region associated with cumulative development of the proposed project in combination with future buildout in the City of Antioch. Based on the analysis below and the lack of feasible mitigation, the impact is *significant and unavoidable*.

4.3-2 Generation of long-term operational criteria air pollutant emissions and a conflict with or obstruction of implementation of regional air quality plans. Based on the analysis, even with mitigation, the impact is *significant and unavoidable* (specifically related to the generation of operational emissions of ROG and NO_X and conflicts with regional air quality plans).

4.3-5 Generation of a cumulatively considerable contribution to criteria air pollutant emissions. Based on the analysis, even with mitigation, the impact is *significant and unavoidable* (specifically related to the generation of operational emissions of ROG and NO_X).

4.3-6 Generation of a cumulatively considerable contribution to GHG emissions. Based on the analysis, even with mitigation, the impact is *significant and unavoidable* (specifically related to compliance with Senate Bill 32).

4.10-3 Operational noise from activities on-site post development. Based on the analysis below, even with mitigation, the cumulative impact is *significant and unavoidable*.

4.12-2 Study intersections under the Existing Plus Project Condition. Based on the analysis below, even with mitigation, the impact is *significant and unavoidable* (specifically related to the Deer Valley Road and Balfour Road intersection [Intersection 21]).

4.12-3 Study freeway facilities under the Existing Plus Project Condition. Based on the analysis below and the lack of feasible mitigation, the impact is *significant and unavoidable* (specifically related to conflicts with the established MTSO for HOV lane utilization at SR 4 west of Lone Tree Way/A Street and SR 4 west of Hillcrest Avenue).

4.12-4 Study intersections under the Near-Term Plus Project Condition. Based on the analysis below, even with mitigation, the impact is *significant and unavoidable* (specifically related to Intersections 6, 11, 19, and 21).

4.12-5 Study freeway facilities under Near-Term Plus Project Conditions. Based on the analysis below and the lack of feasible mitigation, the impact is *significant and unavoidable* (specifically related to conflicts with the established MTSO for HOV lane utilization at SR 4 west of Lone Tree Way/A Street and SR 4 west of Hillcrest Avenue).

4.12-8 Study intersections under the Cumulative Plus Project Condition. Based on the analysis below, even with implementation of mitigation, the cumulative impact would remain *significant and unavoidable* (specifically related to Intersections 4, 5, 6, 10, 11, 19, and 21).

4.12-9 Study freeway facilities under Cumulative Plus Project Conditions. Based on the analysis below and the lack of feasible mitigation, the impact is *significant and unavoidable* (specifically related to conflicts with the stablished delay index MTSO for Eastbound SR 4 west of Lone Tree Way/A Street and conflicts with the established

MTSO for HOV lane utilization at SR 4 west of Lone Tree Way/A Street and SR 4 west of Hillcrest Avenue).