

## 6.0 CEQA REQUIRED CONCLUSIONS

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The California Environmental Quality Act (CEQA) § 15126 requires the consideration of cumulative impacts within an EIR when a project's incremental effect is cumulatively considerable. Cumulatively considerable means that "the incremental effects of an individual 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." In identifying projects that may contribute to cumulative impacts, the CEQA Guidelines allow the use of either a list of past, present, and reasonably anticipated future projects, producing related or cumulative impacts, including those that are outside of the control of the lead agency. The CEQA Guidelines also allow the use of a summary of projections contained in an adopted General Plan or related planning document, which is designed to evaluate regional or area-wide conditions.

This analysis incorporates the information contained within the 2003 City of Antioch General Plan (the "General Plan"), the City's General Plan EIR (July 2003), and analysis prepared for the project. In accordance with section 15130(b) of the CEQA Guidelines, "the discussion of cumulative impacts shall reflect the severity of the impacts and their likelihood of occurrence, the discussion need not provide as great [a level of] detail as is provided for the effects attributable to the project alone." The discussion should be guided by standards of practicality and reasonableness, and should focus on the cumulative impact to which the identified other projects contribute rather than the attributes of other projects which do not contribute to the cumulative impact.

In addition to cumulative impacts, this chapter presents discussions related to effects found not to be significant; significant and unavoidable impacts; significant irreversible changes, including changes in land use committing future generations, irreversible changes, and consumption of non-renewable resources; and growth-inducing impacts.

### 6.1 EFFECTS NOT FOUND TO BE SIGNIFICANT

This section includes all potential impacts listed in Appendix G of the CEQA Guidelines that were determined not to be significant and were therefore not discussed in detail in the EIR.

#### MINERAL RESOURCES

There are no known mineral resources within the project area. The General Plan makes no mention of a locally-important mineral resource recovery site in Antioch or specifically on

the Roddy Ranch property, and analysis of available records and a limited site reconnaissance by ENGE0, Inc. did not reveal any evidence of coal mines or mining activity that operated on the Roddy Ranch property. Therefore, implementing the project would not result in the loss of availability of a locally important mineral resource recovery site delineated in a local land use plan. The project would not pose any impacts to mineral resources.

## AIRPORT IMPACTS

No part of the project is located within an airport land use plan or within 2 miles of a public airport or public-use airport. Therefore, the development of the project area would not result in a safety or noise hazard for people residing or working in the project area.

The project would construct new residential, resort, and recreational uses and does not include any component related to an airport or an airport related facility that would result in changes to air traffic or air traffic patterns. Thus, the project would not result in increase air traffic levels that could result in substantial safety risks.

## HAZARDS AND HAZARDOUS MATERIALS

The project site is not located within a quarter mile of an existing or proposed school. Therefore, there are no impacts related to the exposure of school populations to hazards or hazardous materials associated with the project site.

The Roddy Ranch Golf Club, which is adjacent to the project site, is listed on the County's list of monitoring sites. The golf course uses small amounts of hazardous materials. These materials are regulated, managed, and monitored by the County such that no population is, or will be, exposed to harmful levels. Furthermore, the project site itself is not listed on the County or any State list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. The septic system and leach field associated with the golf course would no longer be used once the new clubhouse is complete. Once this system is excavated and removed, it would not constitute a potential hazard. Therefore, there are no impacts related to the project site being listed as a hazardous materials site.

## INUNDATION HAZARDS

The project is not located within an identified dam failure inundation hazard area. The elevation of the project area and distance from the San Joaquin Delta preclude potential inundation by coastal hazards, such as tsunamis, extreme high tides, or sea level rise.

## POPULATION DISPLACEMENT

Implementation of the project will not result in the displacement of existing housing or population as the project area has no existing homes. Therefore, there are no impacts related to the displacement of homes or population in the project vicinity.

## 6.2 SIGNIFICANT UNAVOIDABLE IMPACTS

CEQA § 15126.2(b) requires that an environmental impact report (EIR) disclose all significant impacts including those that cannot be mitigated to a less-than-significant level, where no feasible mitigation measures exist to further reduce these impacts.<sup>1</sup> Throughout this EIR, mitigation measures have been identified that would reduce the proposed project's impacts to less-than-significant levels, unless otherwise noted.

The following discussion lists only those impacts which are unavoidable and cannot be reduced to less-than-significant levels through the implementation of mitigation measures (including General Plan policies) identified in the General Plan EIR and reiterated as appropriate in this EIR, or developed during preparation of this EIR.

As discussed below, the following impacts are considered to be cumulatively significant and unavoidable:

- Air quality impacts related to build out of the city as discussed in the 2003 General Plan EIR, as well as impact related to global climate change;
- Biological resources impacts related to loss of sensitive species habitat;
- Land use impacts associated with loss of open space; and
- Transportation and Circulation related to level of service at Intersection 10 (Lone Tree Way/James Donlon Boulevard).

### 6.2.1 AIR QUALITY

The General Plan determined that “even with the implementation of mitigation measures, improved local jobs/housing balance, transit-oriented development and low emission technologies, it is anticipated that air quality impacts in the region will continue to be significant due to increased development in the City and County.” Development of the project would result in significant unavoidable impacts related to air quality, through the release of Reactive Organic Gases (ROG), NO<sub>x</sub>, and particulate matter (PM) emissions

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<sup>1</sup> Regulations for the California Environmental Quality Act (CEQA) are set forth in California laws known as the CEQA Statutes (California Public Resources Code Section 21000 et seq) and the CEQA Guidelines (California Code of Regulations, Title 14, Division 6, Chapter 3, Section 15000 et seq).

related to project traffic. Emissions of air pollutants associated with the project were evaluated using the URBEMIS2007 model (Version 9.2.4), which predicts daily emissions associated with land use developments. Even though development under the project would be significantly less than what was assessed in the General Plan, the impacts would still remain significant and unavoidable. The mitigation listed under Mitigation Measure 4.3-1 (**Section 4.3, Air Quality**) is expected to further reduce emissions associated with project build-out; however, emissions of ROG, which are mostly produced by consumer products, and PM<sub>10</sub> would continue to be above the significance thresholds.

## 6.2.2 BIOLOGICAL RESOURCES

The City of Antioch General Plan EIR evaluated the effect of anticipated development on biological resources and concluded that future development would result in the cumulative regional loss of biological resources and wildlife habitat. This finding was based on the assessment that although mitigation for the loss of habitat will be provided, most mitigation programs do not fully replicate the complex ecological relationships that existed in the natural habitat areas that were developed. Therefore, even though local (project specific) impacts will be mitigated to a less than significant level, the General Plan EIR found that development anticipated by the General Plan in combination with development anticipated by other General Plans in the East Bay would result in a significant and unavoidable regional cumulative impact on biological resources. The development of the proposed project, as allowed by Measure K, would contribute to this cumulative loss of biological resources.

## 6.2.3 LAND USE – LOSS OF OPEN SPACE

The General Plan EIR noted that “the implementation of proposed General Plan policies and mitigation measures help reduce the impacts resulting from conversion of open lands to urban uses, but the potential loss of such lands remains a significant unavoidable cumulative impact.”

The project and other future developments associated with build-out of the City would contribute to this cumulative loss of existing open space areas even though the density of development for Roddy Ranch would be less than what was assumed for build out under the General Plan.

## 6.2.4 TRANSPORTATION AND CIRCULATION

Project development would increase traffic on regional and City roadways, and increase delay at signal-controlled study intersections. Although the project would mitigate local impacts to less than significant levels through the construction of roadway improvements, its impact on cumulative traffic impacts pursuant to CCTA methodology cannot be fully mitigated and would remain significant and unavoidable. Furthermore, the payment of fair share fees for certain other intersection improvements does not guarantee the timely

construction of improvements and could result in future unacceptable conditions at area intersections until such improvements are in place. Please refer to **Section 4.14, Traffic and Circulation**, for a discussion of cumulative impacts.

## 6.3 SIGNIFICANT IRREVERSIBLE CHANGES

CEQA § 15126.2(c) requires that an EIR discuss any environmental changes that would be irreversible if the project were implemented. CEQA defines irreversible environmental changes as either irretrievable commitment of resources and/or irreversible damage resulting from environmental accidents. Irreversible changes may include current or future uses of non-renewable resources, and secondary or growth-inducing impacts that commit future generations to similar uses. The CEQA Guidelines describe three distinct categories of significant irreversible changes, including changes in land use that would commit future generations; irreversible changes from environmental actions; and consumption of non-renewable resources.

### 6.3.1 CHANGES IN LAND USE WHICH WOULD COMMIT FUTURE GENERATIONS

As the project area is currently undeveloped property, construction of the East and West Phases, the Hotel/Villas Phase, and the golf course clubhouse would result in development of residential and resort uses on currently undeveloped land, pursuant to Measure K. Development of the Roddy Ranch Focus Area would result in an irreversible commitment of substantial portions of vacant property to development. However, development of this area was mandated by the voters through the passage of Measure K and would also support the City's goal to provide diversification and expansion of housing stock as stated in the General Plan.

### 6.3.2 IRREVERSIBLE CHANGES FROM ENVIRONMENTAL ACTIONS

The project would involve the construction of a new residential and resort development within the Roddy Ranch Focus Area. Non-renewable resources such as fossil fuels would be required for construction and operation of the project. While the use of fossil fuels would be temporary during project construction, operation of the project would require the permanent irreversible conversion of fossil fuels for residential, resort, and recreational power and electricity needs. The change in use and associated commitment of resources necessary for construction and operation of the project is irreversible.

Irreversible changes to the environment could also occur from accidental releases of hazardous materials associated with the development of the project. However, compliance with hazardous materials regulations and policies, as outline in **Section 4.7, Hazards and Hazardous Materials**, would reduce this potential impact to less than significant.

### 6.3.3 CONSUMPTION OF NONRENEWABLE RESOURCES

Consumption of nonrenewable resources includes energy consumption, conversion of agricultural lands, and lost access to mining reserves. The project would result in the consumption of some nonrenewable resources during construction and operation, such as electricity, natural gas and petroleum products, and construction materials. The project is located on land designated as Grazing Land or considered Farmland of Local Importance and the project would result in the conversion of this land from agricultural to urban uses.

However, the project area is not currently used for grazing and is not considered high value agricultural land. Thus, the development of this land would not represent a significant impact to agricultural resources (refer to **Section 4.2, Agricultural Resources**). As the project site does not contain significant mineral resources, project construction and operation would not result in the consumption of such nonrenewable resources.

### 6.4 GROWTH-INDUCING IMPACTS

CEQA requires a discussion of the ways in which the proposed project could be growth inducing. The CEQA Guidelines section 15126.2(d), identifies a project as “growth inducing” if it fosters economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. New population from residential development represents direct forms of growth. A project could also indirectly induce growth by removing physical barriers to growth or by creating a condition that attracts additional population or new economic activity to an area.

Direct growth inducing impacts occur when the development of a project imposes new burdens on a community by directly inducing population growth, or by leading to the construction of additional developments in the same area. Also included in this category are projects that remove physical obstacles to population growth (such as a new road into an undeveloped area or a wastewater treatment plant with excess capacity that could allow additional development in the service area). Construction of these types of infrastructure projects cannot be considered isolated from the development they facilitate and serve. Projects that physically remove obstacles to growth, or projects that indirectly induce growth are those which may provide a catalyst for future unrelated development in an area such as a new residential community that requires additional commercial uses to support residents.

Typically, the growth-inducing potential of a project is considered significant if it fosters growth or a concentration of population in excess of what is assumed in pertinent General Plans or land use plans, or in projections made by regional planning agencies. Significant growth impacts could also be manifested through the provision of infrastructure or service capacity to accommodate growth beyond the levels currently permitted by local or regional plans and policies. In general, growth induced by a project is considered a significant impact if it directly or indirectly affects the ability of agencies to provide needed public

service, or if it can be demonstrated that the potential growth significantly affects the environment in some other way.

#### 6.4.1 DIRECT IMPACTS

The project would result in the development of residential and resort uses on previously open, undeveloped land. As discussed in **Section 4.11, Population and Housing**, the project includes the construction of 574 single-family residential units and up to 100 units of multi-family villa/townhomes, which would house approximately 1,862 people. While an additional 1,862 residents would be introduced with project development, the project would not induce substantial population growth within the City. The new population would constitute only 1.7 percent of the City's anticipated 2010 population growth. Therefore, the increase in population that would result from the project is already expected and would not be significant.

Project development would also involve the construction and extension of public utilities, including water and wastewater lines. Water and wastewater lines would be extended southward within the Deer Valley Road right-of-way from the future intersection of Deer Valley Road and Sand Creek Road. An additional water line would also be extended to the West Phase within the right-of-way of Empire Mine Road. These extensions would provide public utility services and facilities to an area not presently served. However, the General Plan anticipated a level of growth associated within the Roddy Ranch Focus Area that was more intense than that allowed under Measure K. The extension of all services to the project area would be designed to accommodate development at this intensity and would not exceed what was planned for under the General Plan.

Development of the project would leave a gap in the urban fabric from the existing southern edge of the City. However, the project is located within the City's ULL, which was established to limit urban sprawl and preserve open space. Development of the project site would therefore be within a designated area for urban development, which would ultimately maintain the intended urban form of the City. As discussed in **Section 4.9, Land Use and Planning**, the project would also maintain consistency with the General Plan policies related to development and land use compatibility, including limits to urban growth beyond the established ULL.

The City's General Plan anticipates the build out of the 2,712-acre Sand Creek Focus Area, which is located between the northern boundary of project site and the existing southern edge of the City. The General Plan anticipates the development of residential, commercial, mixed-use, and open space uses within the Sand Creek Focus Area, which would provide connectivity between the existing urban developments and the project site. Thus, as the project site is located within the ULL, is consistent with the anticipated build out of the General Plan, and would be connected with the existing urban areas of the City through the anticipated build out of the Sand Creek Focus Area, the project would not represent or encourage leapfrog development within the City of Antioch.

## 6.4.2 INDIRECT IMPACTS

The future expansion of Antioch is constrained by the presence of the ULL. As provided for by Measure K, until 2020 no new growth can occur beyond the City of Antioch's ULL without a vote of the electorate of Antioch. As the project site is located within the ULL, growth associated with the project would not induce unanticipated population growth inconsistent with policies established in the City of Antioch's ULL. The project would result in build out of lands within the City's ULL within the Roddy Ranch Focus Area, and as such cannot be considered as extending or indirectly inducing further growth in the area.

Construction of the project would result in a short-term increase in construction related job opportunities within the City of Antioch. However, construction of new residential development occurs throughout the City and within surrounding cities. Therefore, opportunities provided by construction of the project would not likely result in the relocation of construction workers to the project area. Thus, the project would not have an adverse indirect growth impact.

## 6.5 CUMULATIVE IMPACTS

This section contains an evaluation of the impacts generated from the implementation of the project when considered in conjunction with development forecasts based on the build out of the General Plan. This analysis also considers the cumulative impacts as described in the General Plan EIR prepared to evaluate the cumulative impacts of the General Plan. The cumulative impacts described in the General Plan EIR considered full build out of that plan, which includes the entire City of Antioch and its sphere of influence. The project area is a smaller component of the area included in the General Plan. However, the analysis contained in this EIR is more specific to the project; therefore, cumulative impacts for the project may differ from those described in the General Plan EIR.

This cumulative analysis was prepared using the anticipated build out of the City of Antioch, as described in the City's General Plan. The cumulative impact discussion is organized by each of the environmental issues evaluated in section 4.1 through 4.14 of this Draft EIR. Thresholds of significance for impacts are those indicated in the relevant portions of the sections within Chapter 4.0, under Impacts and Mitigation Measures. In addition, as outlined in CEQA Guidelines section 15139(b)(3), the geographic scope of the project varies depending on the type of impacts discussed, i.e., the cumulative impacts area for air is the San Francisco Bay Area, aesthetic cumulative impacts are described for the areas within and adjacent to the project area. The cumulative impact area for the project is the same as identified in the General Plan and is defined at the beginning of each cumulative impacts analysis.

### 6.5.1 AESTHETICS

The area considered for cumulative impacts to aesthetic resources includes the project area and City of Antioch. Large expanses of open space characterize the visual environment of the project area. The project, in combination with other development in the area, would alter the visual character of the southern portion of the City of Antioch from rural, open space, to urban and developed. However, pursuant to Measure K, development of the project site and the surrounding areas are planned for within the City's General Plan. Additionally, the project would conserve approximately 670 acres of open space within Contra Costa County, which would serve to maintain the natural, open aesthetic character within this region. The project would also not adversely affect public views of designated scenic vistas, such as Mt. Diablo, and would therefore not have a considerable contribution to the cumulative alteration of the visual character or views of designated scenic vistas.

New sources of nighttime lighting would be introduced from the residential, resort, and recreational uses, such as exterior home lighting fixtures, security lighting, parking lot lighting, and internal neighborhood street lights. While the lateral spread from these lighting sources would introduce more light onto the adjacent roadways, and open space areas, mitigation for exterior lighting would reduce the spreading of the light produced by the project. The additional lighting provided by the proposed residential development, when considered in combination with the proposed future development in the region, would not represent a cumulatively considerable contribution to light and glare.

### 6.5.2 AGRICULTURAL RESOURCES

The area for the cumulative impact analysis for agricultural resources includes the City of Antioch. The General Plan EIR concluded that anticipated future development, including the project site, would cumulatively result in the loss of agricultural resources through the conversion of open lands to urban uses. Although mitigation for the loss of agricultural resources would be provided, most mitigation programs do not fully replicate or replace designated farmland and high quality soil.

Development of the project, as allowed under Measure K, would not, however, significantly contribute to this cumulative loss of agricultural resources. As discussed in **Section 4.2, Agricultural Resources**, of this EIR, the project site is not considered to have significant agricultural resources (refer to Appendix B for the Land Evaluation and Site Assessment (LESA) Model). While development of the project and other future developments would cumulatively result in a significant impact to agricultural resources, development of the project site itself would not substantially contribute to the overall conversion or agricultural resources to non-agricultural uses.

### 6.5.3 AIR QUALITY

The area for the cumulative impact analysis for air quality includes the Bay Area air shed. Cumulative air quality impacts are evaluated based on both a quantification of the project-related air quality impacts and the consistency of the project with local and regional air quality plans (i.e., 2003 Antioch General Plan and the Bay Area 2005 Ozone Strategy).

At the local level, future cumulative traffic conditions would not result in any violation of the carbon monoxide (CO) standard. As a result, there would not be a cumulative impact to local air quality. However, emissions associated with traffic generated by the project are predicted to be above the significant thresholds established by the BAAQMD and, therefore, would result in a cumulatively considerable net increase of any criteria pollutant for which the region is nonattainment under an applicable federal or State ambient air quality standard. In addition, retail development of 225,000 square feet could be added to the project site in the future. While future retail development would serve residents and users of the project, it would increase vehicle travel and result in increased air pollutant emissions. Emissions of the project combined with the retail development were predicted using the URBEMIS2007 model for future conditions of 2020. Default URBEMIS2007 trip generation rates were used in the modeling. Since the types of retail uses are not known, reductions for mixed uses were not accounted for in the modeling. These emissions are shown in **Table 6.1**.

Table 6.1 Daily Project Cumulative Emissions for implementation of the Roddy Ranch Project in Pounds Per Day

Scenario	Modeled Daily Emissions in Pounds Per Day (lbs/day)			
	Reactive Organic Gases (ROG)	Nitrogen Oxides (NOx)	Respirable Particulates (PM <sub>10</sub> )	Fine Particulates (PM <sub>2.5</sub> )
Roddy Ranch Cumulative Area Sources	52	10	0	0
Roddy Ranch Cumulative Operational Sources	41	33	113	22
<b>Roddy Ranch Cumulative Total Sources</b>	<b>92</b>	<b>43</b>	<b>113</b>	<b>22</b>
<i>BAAQMD Significance Thresholds</i>	<i>80</i>	<i>80</i>	<i>80</i>	<i>--</i>

Source: Illingworth and Rodkin, 2008.

Emissions of ROG and PM10 would continue to be significant in 2020 with cumulative build-out of the project site. Emissions of ROG and PM10 would actually decrease slightly due to the later build-out year, as vehicle emissions decrease. Therefore, emissions of ROG and PM10 would be cumulatively significant.

The project would be consistent with land use projections envisioned in the 2003 General Plan and the voter initiative Measure K. As a result, the project would not conflict with projections used to develop the latest clean air plan. Furthermore, the City currently implements transportation control measures that are consistent with the Bay Area 2005 Ozone Strategy.

### Greenhouse Gas Emissions

Carbon dioxide, the primary man-made greenhouse gas (GHG) of concern, would be generated by the proposed project, primarily from mobile sources and energy uses. Thresholds of significance have not been developed for projects to evaluate their contribution to global warming. Currently, the CARB, BAAQMD and Contra Costa County have not established regulations, guidance, methodologies, or other means that would require the implementation of measures that would reduce GHG emissions from projects. The Governor's Office of Planning and Research (OPR) has recently recommended that lead agencies quantify emissions, assess the significance, and mitigate significant emissions. The BAAQMD encourages projects to reduce GHG emissions, since a reduction in GHG emissions from a project would benefit the environment.

Emissions associated with the development of the proposed project were calculated. The California Air Pollution Control Officers Association (CAPCOA) has provided guidance for calculating project emissions.<sup>2</sup> Calculation methods for emissions from area, mobile, and electricity usage are recommended by CAPCOA. Area and mobile source emissions were calculated using the URBEMIS2007 model with the same inputs used to calculate emissions of air pollutants. Indirect source emissions from electricity usage were based on rates recommended by the California Climate Action Registry (CCAR) General Reporting Protocol and electricity emission rates recommended by EPA.<sup>3</sup> CAPCOA and CCAR recommend an annual electricity usage rate of 16.7 kilowatts per square foot for commercial spaces (these rates were also used for school and church uses). CO<sub>2</sub> emission rates for electricity use in California are 878.7 pounds per megawatt-hour or 0.878 pounds per kilowatt-hour. An adjustment of 8 percent for electricity losses during generation and distribution was applied. CO<sub>2</sub> is the primary GHG emitted from this type of project. Although there would be emissions of methane and nitrous oxide, which are more potent GHGs, the emissions rates are very small when compared to CO<sub>2</sub> (i.e., less than 3 percent equivalent CO<sub>2</sub>), and as a result these emissions are not calculated. **Table 6.2** shows the

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<sup>2</sup> *CEQA & Climate Change*, California Air Pollution Control Officers Association, January 2008.

<sup>3</sup> Page:25

annual GHG emissions in tons per year, as a result of project development, including residential units, the expansion of the golf course clubhouse, and hotel and villas/townhomes development. Emissions calculations are contained in **Appendix C**.

**Table 6.2 Annual CO<sub>2</sub> Emissions from Proposed Project Alternatives**

Source Type	Basis for Calculation	Annual Emissions (tons per year)	
		Proposed Project	Cumulative Project <sup>1</sup>
Area Sources	Natural gas, landscape equipment and consumer products from URBEMIS2007	2,267 <sup>2</sup>	2,690 <sup>2</sup>
Mobile Sources	Traffic from URBEMIS2007	11,733	24,437
Electricity Usage	Energy usage based on CEC and Climate Action Registry factors for residential and commercial uses	3,491	5,291
<b>Total</b>		<b>17,491</b>	<b>32,418</b>

<sup>1</sup> Includes all project components (residential, resort, and recreational uses), as well as 225,000 square feet of retail uses

<sup>2</sup> Could be reduced by 20% or more through increased energy efficiency (e.g., green building practices)

Source: Illingworth & Rodkin Inc., 2008

The results reported in **Table 6.2** are based primarily on a “business-as-usual” scenario, where current emission rates would apply. This will not likely be the case as AB 32 will require GHG emission reductions in all sectors. Transportation emission rates will likely decrease due to increased fuel efficiency and lower carbon content in fuels. The URBEMIS2007 model does not reflect future fuel efficiency very well. Fuel efficiency is regulated by the U.S. Department of Transportation and current CARB regulations that address climate change. Newer fuel standards would increase light-duty automobile and light-duty truck fuel efficiency by 10 miles per gallon (to 35 miles per gallon for cars sold in 2020). CARB proposes more efficient standards as part of the State’s efforts to reduce GHG emissions. These standards would apply to new vehicles sold, and therefore, would gradually affect the overall fleet as these new vehicles replace older vehicles. The CO<sub>2</sub> emissions estimates for vehicle travel do not accurately reflect future conditions. It is likely that CO<sub>2</sub> emissions with a more fuel-efficient vehicle fleet would be less.

The largest majority of GHG emissions associated with the project would come from motor vehicle use. The proposed project scenario would not be located within walking distance of any services for project users; however, the cumulative project scenario includes local services within walking distance.

Energy usage (natural gas and electricity usage combined) would generate about 16 to 20 percent of the proposed project GHG emissions. Features that reduce energy consumption

and waste can be included in new development that would reduce emissions. For example, Energy Star rated buildings have CO<sub>2</sub> emissions that are about 25% lower than existing buildings of similar size and use<sup>4</sup>. These would include energy-efficient construction methods, inclusion of solar photovoltaic panels to produce energy, solar water heaters, passive solar design, appropriate landscape and water recycling systems.

The project is not located in close proximity to employment areas or retail services, and therefore, could result in longer vehicle trips than typical residences in urban and suburban settings. This is not considered in the URBEMIS2007 modeling, which used default values for recommended input fields to be used in the San Francisco Bay Area. The project would include trails and sidewalks to reduce travel for internal trips. However, the project does not include a mix of uses that would serve residential needs, necessitating off-site vehicle travel. There are not any other opportunities to reduce vehicle trips since employment and retail centers are not within walking distance and there is no public transit that serves the project area. Therefore, it is assumed that the project would cumulatively contribute to global climate change. The project would be indirectly subject to future requirements resulting from actions at the local and State levels, such as those resulting from the legislative approval of AB 32.

Significant impacts to regional air quality were also identified, and transportation and energy usage are the main contributors to that impact. Mitigation Measure 4.3-1 in **Section 4.3, Air Quality**, would reduce both air pollutant and GHG emissions resulting from the project.

#### 6.5.4 BIOLOGICAL RESOURCES

Cumulative development includes past, present, and reasonably foreseeable development that could affect the same biological resources as the proposed project in such a way that a combined physical impact could occur. Biological resources considered for this cumulative analysis include the entire Contra Costa County, and the effect on these biological resources from development anticipated by the City of Antioch General Plan. The City of Antioch General Plan EIR evaluated the effect of anticipated development on biological resources and concluded that future development would cumulatively result in the loss of biological resources and wildlife habitat. This finding was based on the assessment that although mitigation for the loss of habitat will be provided, most mitigation programs do not fully replicate the complex ecological relationships that existed in the natural habitat areas that were developed. Therefore, even though local (project specific) impacts will be mitigated to a less than significant level, the General Plan EIR found that development anticipated by the General Plan would result in a substantial regional cumulative impact on biological resources.

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<sup>4</sup> Energy Star – U.S. EPA and U.S. Department of Energy - [http://www.energystar.gov/index.cfm?c=evaluate\\_performance.bus\\_portfoliomanager\\_carbon](http://www.energystar.gov/index.cfm?c=evaluate_performance.bus_portfoliomanager_carbon)

The development of the proposed project, as allowed by Measure K, would contribute to this cumulative loss of biological resources. As discussed in **Section 4.4 Biological Resources**, the proposed project would result in the loss of 520 acres of annual grassland habitat, 26.27 acres of blue oak woodland and savannah, and approximately 5.2 acres of wetlands, drainages, and other aquatic habitats. There would also be additional temporary and permanent losses of these habitat types from development of the off-site utility corridor. The lands to be developed or altered provide known or potential habitat for numerous special-status plant and wildlife species (see **Section 4.4, Biological Resources**). The mitigation required by this EIR would reduce project-related impacts to individual species and their habitat to a less than significant level. However, when considered with other development anticipated by the General Plan, the large acreage of habitat to be developed (and which cannot be completely replaced) would substantially contribute to the ongoing loss of habitat and associated special-status plant and wildlife species.

The loss of habitat associated with the proposed project would also contribute to the restriction and loss of regional wildlife movement corridors. According to the ECCCHCP, Horse and Lone Tree Valleys together form the widest potential movement route for San Joaquin kit fox between Black Diamond Mines Regional Preserve and Cowell Ranch State Park. The proposed project would restrict wildlife movement through Horse Valley, but the adjacent Lone Tree and Deer Valleys would continue to provide potential wildlife movement pathways. However, when combined with future development anticipated by the General Plan in Lone Tree Valley, the project-related development within Horse Valley would substantially contribute towards the restriction of a potential wildlife movement corridor. Therefore, consistent with the findings of the City of Antioch General Plan EIR, the proposed project would substantially contribute to the ongoing loss of biological resources and habitat, including associated special-status plant and wildlife species and potential wildlife movement corridors.

### 6.5.5 CULTURAL RESOURCES

The area for the cumulative impact analysis for cultural resources includes the project area and Contra Costa County. There is one historic site located in the project area that appears to be eligible to the California Register of Historical Resources (CRHR); further testing is required and if eligible, an Archaeological Data Recovery Plan (ADRP) shall be developed to mitigate project effects. Due to the proximity of recorded archeological sites, the potential exists for unknown archeological resources to be encountered on the project site. Although there are no previously recorded Native American cultural resources within the immediate vicinity of the project area, the potential exists for undiscovered Native American resources and/or human remains to be encountered within the project area.

The project would implement mitigation measures in compliance with the City of Antioch General Plan that would avoid, preserve, or minimize all of the project's impacts on cultural resources such that they would not be cumulatively considerable.

### 6.5.6 GEOLOGY AND SOILS

Cumulative seismic impacts were assessed for the project area and the City of Antioch. Other geology and soil resources considered for this analysis are limited to the project site. The General Plan EIR concluded that the increase in population resulting from development of the project site and cumulative development throughout the City would increase the number of residents and employees exposed to the region's known seismic hazards. However, conformance with the 2007 California Building Code to preserve building integrity during a seismic event would reduce this cumulative impact to a less-than-significant level.

Cumulative impacts to geology and soils associated with the project site, such as soil erosion and slope instability, would be less than significant by completing the project in accordance with local, state, and federal regulations. Geological investigations and evaluations of historical mining activities on the adjacent properties north and east of the project site, along the coal-bearing Domingene Formation, have identified and secured potential mine openings; therefore, the cumulative impacts related to abandoned mines are less than significant. As the project would remain in accordance with local, state, and federal regulations, the project would not have a considerable contribution to the cumulative impact.

### 6.5.7 HAZARDS AND HAZARDOUS MATERIALS

The area for the cumulative impact analysis for hazards and hazardous materials includes the project area and adjacent Roddy Ranch Golf Club. The increase in population resulting from development of the project would increase the use and storage of hazardous household, commercial, and industrial materials. New development would increase the risk of exposing a large population to accidental upsets of hazardous materials. However, the use, storage, and disposal of hazardous materials is highly regulated by local, State, and federal laws. The General Plan EIR found that the handling of hazardous materials in accordance with these regulations would reduce cumulative hazardous materials risks to a less-than-significant level.

There are four water production wells and two groundwater monitoring wells on the project site that currently are unused and it has been indicated that there are no plans for future use; the onsite water supply well located at the Roddy Ranch Golf Club also may be abandoned in the future. All unused wells would be properly abandoned/destroyed in accordance with applicable regulations and this impact would not be cumulatively significant.

Technical references indicate the presence of three abandoned gas exploration boreholes on the project site that may require further testing and/or re-abandonment. The property owner would notify the California Department of Conservation, Division of Oil, Gas, and Geothermal Resources (DOGGR) of the three abandoned gas exploration boreholes and

they shall determine if further testing and/or re-abandonment is necessary. Therefore, this impact would not be cumulatively significant.

One or more ventilation shafts may be present on the project site from mining activities in the area northwest of the project area that was historically mined for coal. If any shafts are identified and encountered during project grading activities, they would be sealed in accordance with applicable regulations and this impact would not be cumulatively significant.

### 6.5.8 HYDROLOGY AND WATER QUALITY

This analysis considers cumulative hydrology and water quality impacts for the project area and Contra Costa County. The General Plan EIR found that because the City of Antioch and Contra Costa County maintain policies providing similar protection to water quality and from flood hazards there were no cumulative impacts to water quality and flooding. However, the General Plan EIR states that the General Plan, in conjunction with other development within the County, would result in increases in impervious surface and would be cumulatively significant.

The RWQCB has mandated that Contra Costa municipalities in their jurisdiction impose new, more stringent requirements to control stormwater runoff from development projects as part of 1987 amendments to the Clean Water Act. The City of Antioch started to phase in these requirements in 2004, with full implementation in 2006. Planned improvements downstream of the project include the Upper Sand Creek detention basin that will control flood waters entering from the upper Sand Creek watershed, providing protection for the wider Antioch and Brentwood areas and ensuring that future planned development would not result in a cumulative flooding impacts. Furthermore, the mitigation measures included in **Section 4.8, Hydrology and Water Quality**, require that the project improve drainage conditions onsite such that they are equal to or better than pre-development conditions for drainage and water quality. The design of the proposed detention basins would ensure that downstream flooding is not exacerbated.

### 6.5.9 LAND USE AND PLANNING

This analysis considers land use impacts based on build-out of the City of Antioch. The General Plan EIR noted that “the implementation of proposed General Plan policies and mitigation measures help reduce the impacts resulting from conversion of open lands to urban uses, but the potential loss of such lands remains a significant unavoidable cumulative impact.”

The intensification of development associated with build-out of the city, which includes the project and other developments assumed in the Sand Creek Focus Area, would contribute to a significant change in overall land use pattern from open, undeveloped land to more urbanized uses, especially in the southern reaches of the city limits.

## 6.5.10 NOISE

The area for the cumulative impact analysis for noise is fairly localized and includes the project area and areas proximate to project area. The General Plan EIR concluded that buildout of the development analyzed in the General Plan would result in potentially significant impacts associated with both short-term and long-term vehicular and construction noise, but concluded that these impacts would be reduced to a less-than-significant level through implementation of the General Plan policies.

### *Traffic Noise*

Future development of the project area in combination with other project developments in Antioch would result in a cumulative increase in traffic noise levels. Cumulative traffic volumes provided by W-Trans were reviewed to calculate future build-out traffic noise levels and the project's relative contribution to noise levels along roadway segments where noise levels would be substantially increased. Cumulative noise level increases of 3 dBA CNEL or more are anticipated along Hillcrest Avenue near SR 4, Dallas Ranch Road south of Lone Tree Way, Deer Valley Road near Balfour Road, Deer Valley Road between Lone Tree Way and the Project Site, and Balfour Road near American Avenue. The review indicated that the project *would not* contribute a "cumulatively considerable" increase in noise (more than 1 dBA CNEL) to the cumulative noise level. This is a less than significant cumulative impact.

### *Commercial Operational Noise*

A commercial center is proposed west of the Deer Valley Road/Balfour Road intersection. The specific uses at the proposed commercial parcels are unknown at this time but are expected to be neighborhood serving uses including neighborhood markets, coffee shops, restaurants, bookstores, offices, etc. The nearest existing sensitive uses are located over 400 feet east across Deer Valley Road. Noise sources associated with commercial uses could include vehicle and truck circulation, loading docks, mechanical equipment, activities in the parking lot, and other miscellaneous noise sources.

Noise resulting from parking lots, mechanical equipment, loading and unloading activities would be 37 to 47 dBA at the nearest existing receiver east of Deer Valley Road and well below ambient noise levels resulting from traffic. Shielding by terrain would result in much lower levels at distant receivers. Noise levels generated by the commercial component would be 24 to 34 dBA at residential receivers along Chadbourne Road.

Noise levels at the proposed neighborhoods bordering the commercial center to the north could exceed the noise level limits established in the Antioch General Plan. The commercial portion of the site would undergo a separate round of environmental review when plans are developed. The results of these studies would require that noise generated by the commercial parcels be controlled to not exceed the limits established in the General Plan.

### 6.5.11 POPULATION AND HOUSING

The area for the cumulative impact analysis for population and housing includes all of Contra Costa County. The project would not incur substantial population growth and would not displace any existing housing or people. Specifically, the project would add a maximum of approximately 1,862 residents to the City of Antioch, representing 1.7 percent of the City's anticipated 2010 population growth.

The amount of new population and housing resulting from development in the project area is consistent with the General Plan's growth management goals set forth in its Rate of Growth policies and in fact would be less than the amount of growth analyzed in the General Plan EIR. Additionally, because the population growth that would occur with the project (as well as the General Plan) is anticipated by the Association of Bay Area Governments (ABAG) and would be confined within the ULL, the project would not cumulatively result in substantial, unanticipated population growth. As any future development associated with the project would be considerably less than what was anticipated by the General Plan EIR, the cumulative contribution of such a future project would not be considered cumulatively considerable.

### 6.5.12 PUBLIC SERVICES

#### *Parks and Recreation*

Cumulative parks and recreation impacts were assessed for the project area and the City of Antioch. The increase in population resulting from development of the project area and cumulative development throughout the City would increase the demand for additional public parks and recreational facilities, which would require the expansion of existing facilities and recreational programs or the construction of new parks and facilities. However, the General Plan EIR concluded that General Plan Policies and mitigation measures (including the provisions of the Quimby Act fees and taxes on new development) would ensure the provision of adequate parks and recreational facilities. Other developments in the City would be required to abide by the relevant General Plan policies, as well as the regulations for the dedication of land, the payment of fees, or both, for park and recreational lands (Antioch Code of Ordinances, Title 9, Chapter 4: Subdivisions, Article 10); thereby reducing any cumulative impacts to a less than significant level.

#### *Schools and Libraries*

Cumulative impacts to schools and libraries were assessed for the City of Antioch, the BUSD, and the LUHSD. The increase in population resulting from development of the project area and cumulative development throughout the City and school districts would increase the demand for additional school and library facilities, and would require the addition of new teachers and/or personnel, or the construction of new facilities. However, the General Plan EIR concluded that General Plan Policies and mitigation measures (including the application of school impact fees and taxes on new development) would

ensure the provision of adequate school and library facilities. Other developments in the City would be required to abide by the relevant General Plan policies, as well as SB50 (payment of school impact fees), thereby reducing any cumulative impacts to library facilities to a less than significant level. As discussed previously, under SB50, payment of school impact fees by the project applicant and other developments within the BUSD and LSHSD would result in no impact to schools.

#### *Emergency Services*

Cumulative emergency services impacts were assessed for the project area and the City of Antioch. The increase in population resulting from development of the project area and cumulative development throughout the City would increase the need for additional police and fire personnel and related support facilities. However, the General Plan EIR concluded that General Plan policies and mitigation measures (including the payment of developer fees and taxes on new development) would ensure the provision of adequate emergency services and ensure the funding for additional personnel and facilities. Other developments in the City would be required to abide by the relevant General Plan policies, and therefore, not resulting in any cumulative impacts.

#### *Public Utilities*

Future development of the project area in combination with other development projects in Contra Costa County would result in a cumulative increase in the demand for the utilities and urban services, including communication and energy services, solid waste collection and processing, wastewater collection and treatment, and domestic water service. The areas considered for the cumulative analysis include the City of Antioch (solid waste, communications, and energy), the CCWD service area (water supply), and the DDSD service area (wastewater). The General Plan EIR concluded that utility improvements funded by subsequent development projects, routine expansions of water and wastewater treatment plants and infrastructure, and energy conservation measures would ensure that full build out of Antioch, including the project area, would have less than significant cumulative impacts on wastewater treatment, energy, and telecommunication systems. Water conservation measures on new development would result in a less substantial increase in water demand than would occur without such measures, further reducing cumulative water consumption impacts within the City and County.

### **6.5.13 TRAFFIC AND CIRCULATION**

The area considered for the cumulative impact analysis for traffic includes the City of Antioch; the surrounding cities of Brentwood, Pittsburg, and Oakley; and surrounding areas of East Contra Costa County. The General Plan EIR concluded that "Traffic and circulation impacts will remain significant, even after the implementation of all feasible mitigation by the City of Antioch. Even though local traffic impacts will be mitigated through implementation of the above policies, growth within adjacent jurisdictions would cause the region to experience significant traffic and circulation impacts. These impacts

would occur even if the proposed General Plan was not adopted or if no additional growth were to occur within the City.”

Project development would increase traffic on regional and City roadways, and increase delay at signal-controlled study intersections. Although the project would mitigate local impacts to less than significant levels through the construction of roadway improvements, its impact on cumulative traffic impacts pursuant to CCTA methodology cannot be fully mitigated and would remain significant and unavoidable. Furthermore, the payment of fair share fees for certain other intersection improvements does not guarantee the timely construction of improvements and could result in future unacceptable conditions at area intersections until such improvements are in place. Please refer to **Section 4.14, Traffic and Circulation**, for a discussion of cumulative impacts.