

## **3 ENVIRONMENTAL IMPACT ANALYSIS**

### **3.0 APPROACH TO THE ENVIRONMENTAL IMPACT ANALYSIS**

#### **3.0.1 SCOPE OF ANALYSIS**

Sections 3.1 through 3.15 of this EIR present the environmental impact analysis for the anticipated effects of implementation of the 2035 General Plan. Topics evaluated in these sections were identified in the notice of preparation (NOP) (Appendix A). The environmental topics are:

- 3.1 Agricultural Resources
- 3.2 Air Quality
- 3.3 Biological Resources
- 3.4 Cultural Resources
- 3.5 Greenhouse Gas Emissions
- 3.6 Energy
- 3.7 Geology, Soils, Minerals, and Paleontological Resources
- 3.8 Hazards and Hazardous Materials
- 3.9 Hydrology and Water Quality
- 3.10 Land Use and Planning
- 3.11 Noise and Vibration
- 3.12 Population and Housing
- 3.13 Utilities and Service Systems, Public Services, and Recreation
- 3.14 Traffic and Transportation
- 3.15 Visual Resources
- 4 Alternatives
- 5 Other CEQA Considerations

In addition to the topics listed above, this EIR presents a discussion of other analyses required under CEQA (including cumulative and growth-inducing impacts). These analyses are presented in Chapter 5, “Other CEQA Considerations,” of this EIR. Alternatives analysis is presented in Chapter 4.

#### **3.0.2 STRUCTURE**

The General Plan Technical Background Reports (Volume II) include a description of existing conditions (both physical and regulatory). Each sub-section in Section 3 of this EIR presents a detailed evaluation of a particular environmental topic, including potential environmental impacts, mitigation measures proposed to reduce significant environmental impacts (where necessary), and a determination of the level of significance after mitigation measures are implemented.

For this EIR, mitigation measures are provided by the policies and programs of the 2035 General Plan. In some sections, mitigating policies and programs are summarized generally, whereas in other sections – particularly where there are a large number of mitigating policies and programs – the policies and programs are listed. For a complete and current summary of General Plan policies and programs (as well as goals and objectives), see Volume I of this document. The three volumes together comprise the General Plan and EIR.

This EIR also addresses the adverse physical environmental effects associated with the City’s Draft Climate Action Plan. The reduction measures in the Draft Climate Action Plan implement policies in the 2035 General Plan and to a great extent analysis of the 2035 General Plan would also address impacts associated with the Draft Climate Action Plan.

## **ENVIRONMENTAL SETTING**

This subsection of the Technical Background Reports provides relevant information about the existing physical environment related to the particular environmental topic. In accordance with Section 15125 of the State CEQA Guidelines, the discussion of the physical environment describes existing conditions within the City at the time the NOP was filed—unless otherwise noted.

## **REGULATORY SETTING**

This subsection of the Technical Background Reports describes federal, state, and regional and local plans, policies, regulations, and laws that may apply to the environmental topic being evaluated with implementation of the 2035 General Plan.

## **ENVIRONMENTAL IMPACT ANALYSIS**

This sub-section of Section 3 of this EIR focuses on an analysis of the potential environmental impacts of the project described in Section 2, “Project Description,” of this EIR. First, where applicable, the subsection describes the methods, process, procedures, and/or assumptions used to formulate and conduct the impact analysis. Next, it presents the thresholds of significance used to identify the potential environmental impacts of the 2035 General Plan and Draft Climate Action Plan. Following this is an analysis of the potential environmental impacts themselves. Specifically, this analysis uses the following format:

- ▶ An impact statement at the beginning of each impact discussion summarizes the potential impact of the 2035 General Plan and its level of significance under CEQA, based on the identified thresholds of significance.
- ▶ The potential impact is explained in greater detail, using sufficient technical information to further characterize the impact as previously summarized and to formulate a conclusion about its level of significance.
- ▶ Relevant General Plan policies and programs that would reduce or avoid impacts are summarized.
- ▶ When necessary and feasible, the analysis of the impact is followed by a description of one or more proposed mitigation measures. Mitigation measures are required by the State CEQA Guidelines when a significant impact is identified. All mitigation measures must be enforceable through legally binding instruments. Section 15370 of the State CEQA Guidelines defines mitigation as:
  - avoiding the impact altogether by not taking a certain action or parts of an action;
  - minimizing impacts by limiting the degree of magnitude of the action and its implementation;
  - rectifying the impact by repairing, rehabilitating, or restoring the impacted environment;
  - reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; or
  - compensating for the impact over time by replacing or providing substitute resources or environments.

Throughout Section 3 of this EIR, references to “the 2035 General Plan” include consideration of the Draft Climate Action Plan, an implementing program of the 2035 General Plan.

## RESIDUAL SIGNIFICANT IMPACTS

This subsection describes the significance of the potential impact after incorporation of the relevant 2035 General Plan policies and programs, as well as any necessary mitigation measures. Impacts are described as either less than significant or significant and unavoidable. Significant and unavoidable impacts are identified here and summarized in Chapter 5, “Other CEQA Considerations.”

### 3.0.3 DETERMINING LEVEL OF SIGNIFICANCE

For each potential environmental impact identified in this EIR, a statement of the level of significance of the impact is provided. Impacts are assessed as one of the following categories:

- ▶ The term “no impact” is used when the environmental resource being discussed would or may not be adversely affected by implementation of the 2035 General Plan. It means no change from existing conditions. This impact level does not need mitigation.
- ▶ A “less-than-significant impact” would or may cause a minor, but acceptable adverse change in the physical environment. This impact level does not require mitigation, even if feasible, under CEQA.
- ▶ A “significant impact” would or may have a substantial adverse effect on the physical environment, but could be reduced to a less-than-significant level with mitigation. Impacts may also be considered “potentially significant” if the analysis cannot definitively conclude that an impact would occur as a result of the implementation of the 2035 General Plan. Under CEQA, mitigation measures must be provided, where feasible, to reduce the magnitude of significant or potentially significant impacts.
- ▶ A “significant and unavoidable impact” would or may cause a substantial adverse effect on the environment, and no known feasible mitigation measures are available to reduce the impact to a less-than-significant level. Under CEQA, a project with significant and unavoidable impacts could proceed, but the lead agency (in this case, the City) would be required to prepare a “statement of overriding considerations” in accordance with Section 15093 of the State CEQA Guidelines, explaining why the lead agency would proceed with the project in spite of the potential for significant impacts.

### 3.0.4 FORMAT OF IMPACT ANALYSIS

Throughout the discussion, impacts are identified numerically and sequentially. For example, impacts discussed in Section 3.1 are identified as 3.1-1, 3.1-2, and so on.

The format used to present the evaluation of impacts is as follows:

**IMPACT**     **Impact Title.** *An impact summary heading appears before the impact discussion. The heading contains the impact number and title. The impact statement briefly summarizes the findings of the impact discussion below. The level of significance is included at the end of the summary heading. Levels of significance listed in this EIR (as described above) are **no impact, less than significant, potentially significant, or significant.***

**4.0-1**

The impact discussion is contained in the paragraphs following the impact statement and describes the impact in detail. The analysis compares full buildout of the 2035 General Plan to existing conditions. The discussion does the following:

- ▶ identifies federal, state, regional, and local regulations that would fully or partially mitigate the impact;
- ▶ identifies 2035 General Plan policies and programs that would partially or fully mitigate the impact; and,

- ▶ describes the potential impact after the various regulations and goals, policies, and actions are taken into account.

# 3.1 AGRICULTURAL RESOURCES

## METHODOLOGY

Evaluation of potential agricultural and forestry resources impacts from implementation of the 2035 General Plan was based on aerial photographic review of resources, analysis of the Department of Conservation’s Important Farmland and Williamson Act maps for Solano County, and a comprehensive evaluation of the 2035 General Plan’s direct and indirect effects on agricultural operations in the vicinity of the Planning Area.

## THRESHOLDS OF SIGNIFICANCE

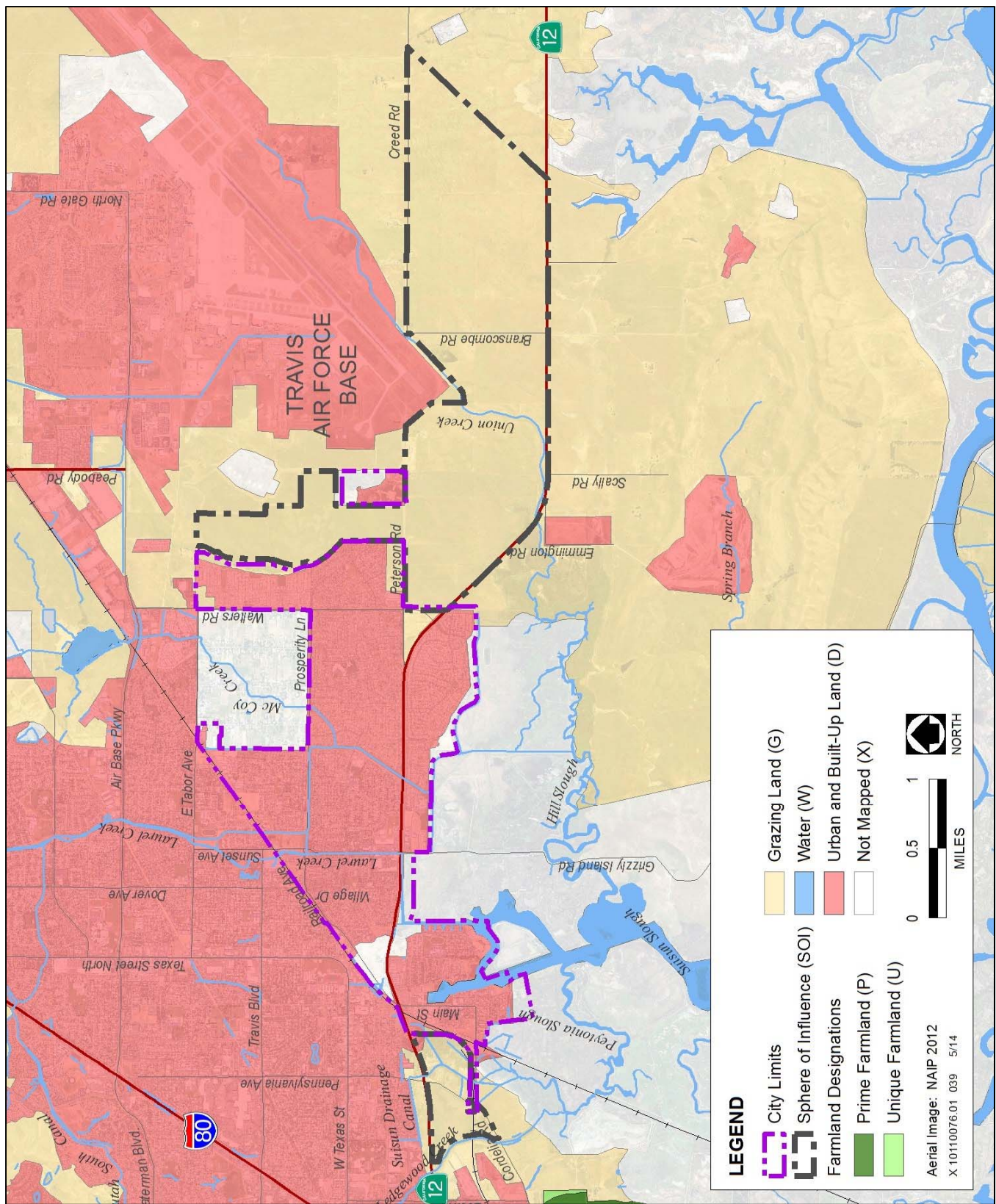
Based on Appendix G of the State CEQA Guidelines, the proposed project would result in a potentially significant impact on agriculture and forestry resources if it would:

- ▶ convert Important Farmland (i.e., Prime Farmland, Unique Farmland, or Farmland of Statewide Importance) as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use;
- ▶ conflict with existing zoning for agricultural use or a Williamson Act contract;
- ▶ conflict with existing zoning for, or cause rezoning of, forestland (as defined in Public Resources Code Section 12220[g]), timberland (as defined in PRC Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104[g]);
- ▶ result in the loss of forest land or conversion of forestland to non-forest use; or
- ▶ involve other changes in the existing environment which, due to their location or nature, could result in conversion of Important Farmland to non-agricultural use or conversion of forestland to nonforest use.

## IMPACT ANALYSIS

**IMPACT 3.1-1**      **Conversion of Important Farmland to Non-Agricultural Uses.** *Implementation of the 2035 General Plan would not convert Important Farmland to non-agricultural use. The Planning Area and surrounding lands is Urban and Built-Up Land and Grazing Land. These farmland designations are not considered Important Farmland. There is **no impact**.*

Land use changes accommodated under the 2035 General Plan would not directly or indirectly convert Important Farmland (Prime Farmland, Farmland of Statewide Importance, or Unique Farmland) to non-agricultural uses. The Solano County Important Farmland map designates 2,288 acres of land within the City limits as Urban and Built-Up Land, 118 acres as Grazing Land, and 218 acres as Other Land and designates 2,582 acres of land within the Planning Area as Grazing Land (Exhibit 3.1-1).



Source: FMMP 2010

**Exhibit 3.1-1**

**Important Farmland**

No lands adjacent to the Planning Area are designated as Important Farmland. Lands north and west of the City limits are designated as Urban and Built-Up Land and lands south, southeast, and east of the Planning Area are designated as Grazing Land. The Urban and Built-Up Land, Grazing Land, and Other Land designations are not considered Important Farmland under CEQA (California Public Resources Code Sections 21060.1). There are no Important Farmlands adjacent to the City's Planning Area, either. Therefore, implementation of the 2035 General Plan would not directly convert Important Farmland within the Planning Area or indirectly convert Important Farmland outside of the Planning Area to non-agricultural uses or result in changes that could convert Important Farmland to non-agricultural uses. Implementation of the General Plan would not create the need to expand transportation infrastructure, utilities, or government service facilities in a way that could lead to the conversion of Important Farmland. There is **no impact**.

#### Mitigation Measure

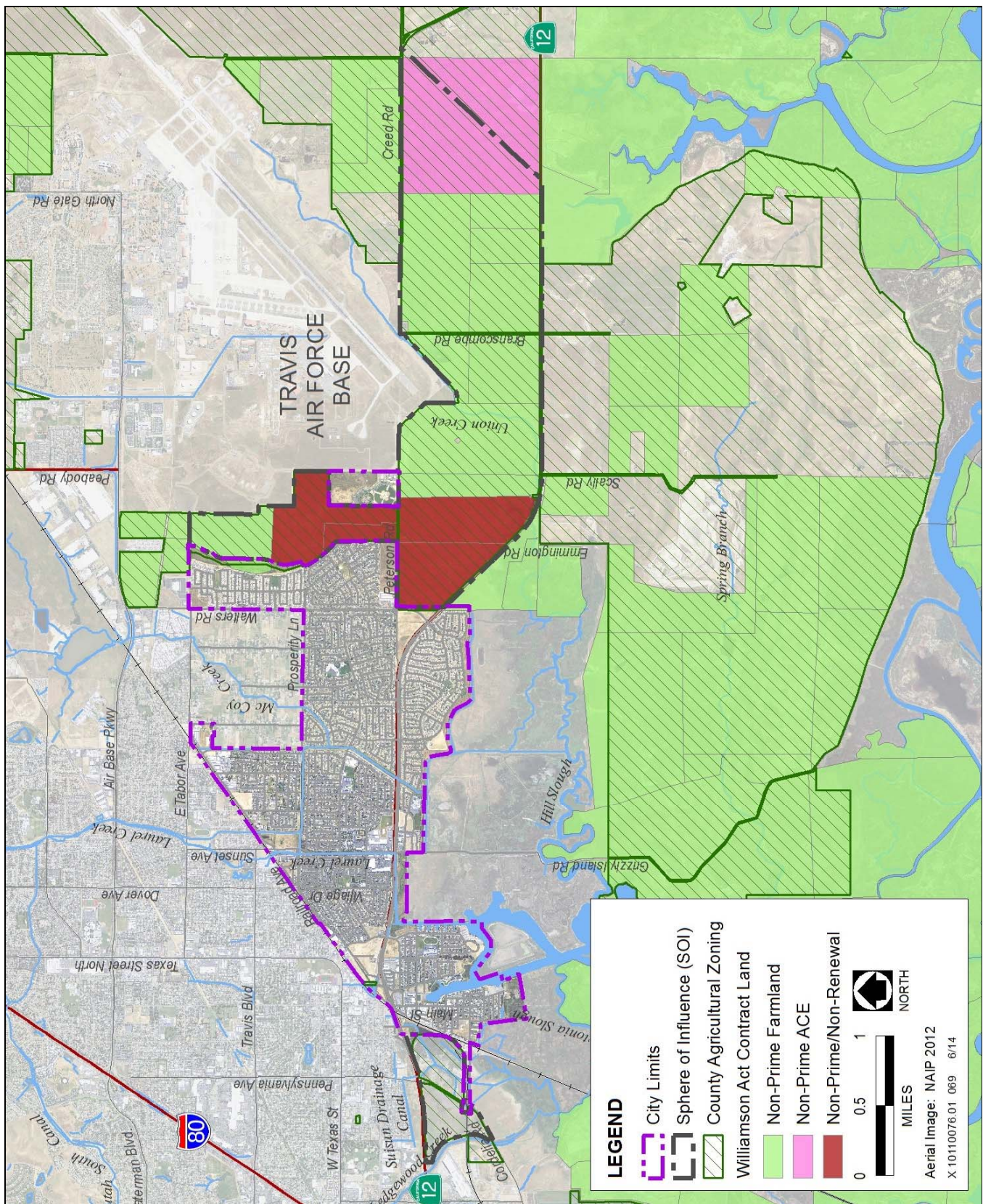
No mitigation is required.

**IMPACT 3.1-2**      **Conflict with Existing Zoning for Agricultural Use or a Williamson Act Contract.** *The 2035 General Plan could accommodate new developments on parcels currently under Williamson Act contracts. Cancellation of one or more of these Williamson Act contracts could be required if development of land uses were to occur before the expiration of these contracts. In addition, implementation of the 2035 General Plan could accommodate land use change to a non-agricultural use for parcels with Solano County agricultural zoning designations. This impact is considered **potentially significant**.*

Lands in the eastern and western portions of the City's Planning Area are currently in unincorporated Solano County and have agricultural zoning designations. Lands west of the City limits in the Planning Area are zoned "A-40," which is "Exclusive Agriculture" with a 40-acre minimum parcel size. Lands east of City limits and north of Peterson Road are zoned "A-20," which is "Exclusive Agriculture" with a 20-acre minimum parcel size. Lands east of City limits and south of Peterson Road are zoned "A-160," which is "Exclusive Agriculture" with a 160-acre minimum parcel size (Solano County 2012). The 2035 General Plan identifies allowable uses that could accommodate land use change to a non-agricultural use for parcels with current Solano County agricultural zoning designations. Agricultural zoning exists on approximately 55 acres east of the City limits and 109 acres west of City limits that could conflict with allowable land use under the 2035 General Plan.

The City's Zoning Ordinance describes the permitted land uses and development standards for each of the designated zoning districts in the City on a parcel-by-parcel basis and the City will revise the Zoning Ordinance, as necessary, to implement the 2035 General Plan. The 2035 General Plan also requires that the City establish pre-zoning consistent with the 2035 General Plan prior to annexation. To annexation of these lands, the Solano County Local Agency Formation Commission (LAFCO) will require a pre-zoning application that identifies new zoning for lands currently zoned as A-40, A-20, and A-160. Solano County LAFCO approval would remove conflicts with County agricultural zoning district designations.

Under the California Land Conservation Act of 1965, also known as the Williamson Act, local governments can enter into contracts with private property owners to protect land (within agricultural preserves) for agricultural and open space purposes. As shown on Exhibit 3.1-2, lands under Williamson Act contracts are located eastern portion of the Planning Area, outside of current City limits. These lands are generally located north and south of Peterson Road, east of Walters Road, and north and northeast of SR 12.



Source: Suisun City 2011, AECOM 2011

**Exhibit 3.1-2**

**Williamson Act Lands**

Approximately 1,987 acres of land within the Planning Area are under Williamson Act contracts. Of this total, 1,410 acres of land are under active Williamson Act contracts, whereas 577 acres are in the process of nonrenewal.<sup>1</sup> The 2035 General Plan could accommodate land use change that could require cancellation of active Williamson Act contracts. These lands are located north and south of Peterson Road and east of the current City limits. These existing contracts will expire by 2015. The 2035 General Plan could accommodate land use change in these areas, potentially prior to the time when the current contracts would expire. New developments on these parcels could require the cancellation of one or more of these Williamson Act contracts if development were to occur before the expiration of these contracts.

Project proponent(s) for development of parcels under Williamson Act contract would need to apply to the City of Suisun City for contract cancellation. The actual determination of consistency with the statutory consistency requirements would be made by the City Council, as it would succeed to the contracts upon annexation of these areas. The City would be required to make findings supporting the cancellation of Williamson Act contracts pursuant to California Government Code Section 51282 by determining if the cancellation is consistent with the purpose of the California Land Conservation Act or the cancellation is in the public interest. Because implementation of the 2035 General Plan could result in cancellation of Williamson Act contracts and because allowable land use under the 2035 General Plan could conflict with existing agricultural zoning, this impact is considered **potentially significant**.

### **Relevant Policies and Programs of the 2035 General Plan**

The 2035 General Plan includes policies and programs that address cancellation of Williamson Act contracts. The City will participate in a cooperative regional agriculture impact mitigation fee program, to the extent that such a program is developed with Solano County and the cities within the County. This program should define the method(s) by which the loss of land under Williamson Act contracts is to be mitigated for projects located outside City limits, including, but not limited to payment of in-lieu fees, establishment of agriculture conservation easement replacement ratio criteria, and determination of timing of dedication of conserved agricultural lands. This program should be structured to allow projects that result in the loss of Williamson Act lands to mitigate their impacts through participation in the Solano Multispecies Habitat Conservation Plan through the payment of fees or land dedication used to purchase conservation easements that would result in potential future benefits to agriculture, as well as the species and habitats directly addressed by the Solano Multispecies Habitat Conservation Plan.

New developments involving land with Williamson Act contracts will apply to the City for contract cancellation and the City will consider statutory consistency requirements and findings required to support the cancellation according to applicable requirements. In addition, the City will support and promote the Williamson Act easement exchange program as an alternative to payment of cancellation fees. The Williamson Act easement exchange program allows for voluntary rescission of notices of nonrenewal and dedication of permanent agricultural conservation easement on other lands under Williamson Act contracts, pursuant to the provisions of Government Code Section 51254 in areas which notices of nonrenewal have been filed. Williamson Act contract can be simultaneously cancelled along with dedication of a permanent agricultural conservation easement on other lands under Williamson Act contracts. The conservation easement is in lieu of payment of fees.

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<sup>1</sup> The nonrenewal of a Williamson Act contract may be initiated by either the landowner or the local government. This is the preferred method for ending the contract in an orderly fashion, as the contract approaches its remaining years of the term (i.e., 10 years).

Please refer to the 2035 General Plan and, in particular, the Open Space and Conservation Element for more details.

- ▶ **Policy OSC-9.4:** New developments involving land with Williamson Act Contracts shall apply to the City of Suisun City for contract cancellation and the City will consider statutory consistency requirements and findings required to support the cancellation according to applicable requirements.
- ▶ **Program OSC-9.1:** The City will participate in a cooperative regional agriculture impact mitigation fee program, to the extent that such a program is developed with Solano County and the cities within the County. Among other elements, this program should define the method(s) by which the loss of land under Williamson Act contracts is to be mitigated for projects located outside City limits, including, but not limited to payment of in-lieu fees, establishment of agriculture conservation easement replacement ratio criteria, and determination of timing of dedication of conserved agricultural lands. Mitigation lands should be within the same agricultural region as the proposed development project and of similar agricultural quality to the lands where contracts were cancelled. This program should be structured to allow projects that result in the loss of Williamson Act lands or Important Farmlands to mitigate their impacts through participation in the Solano Multispecies Habitat Conservation Plan (SMHCP) through the payment of fees or land dedication used to purchase conservation easements that would result in potential future benefits to agriculture as well as the species and habitats directly addressed by the SMHCP.
- ▶ **Program OSC-9.2:** The Williamson Act easement exchange program is an alternative to payment of cancellation fees. The Williamson Act easement exchange program allows for voluntary rescission of notices of nonrenewal and dedication of permanent agricultural conservation easement on other lands under Williamson Act contracts, pursuant to the provisions of Government Code Section 51254 in areas which notices of nonrenewal have been filed. Williamson Act contract can be simultaneously cancelled along with dedication of a permanent agricultural conservation easement on other lands under Williamson Act contracts. The conservation easement is in lieu of payment of fees. In order to make use of this program, project applicants will be required to provide funding to the City necessary to support analysis and documentation of findings required for this program. Current findings include:
  - the conservation easement is consistent with criteria defined in Public Resources Code Sections 10251 and 10252, The easement land shall be of a sufficient size to support commercial agriculture, be located within an agricultural preserve designated by a local government, and be located within two miles outside of the boundary of the sphere of influence of the City as established by the Solano County Local Agency Formation Commission;
  - the land restricted by the easement is of equal or larger size than the land being removed from the Williamson Act contract;
  - the value of the easement (based on an appraisal) is equal to or greater than the fee calculated for cancellation of the Williamson Act contract; and
  - that the proposed easement will make a beneficial contribution to the conservation of agricultural land in the area.

## Conclusion

Implementation of General Plan policies and programs described above would only partially offset conversions of land under Williamson Act contracts. No new farmland would be made available, and the productivity of existing farmland would not be improved. The impact is **significant**.

## Mitigation Measure

There is no feasible mitigation available to reduce impacts associated with the cancellation of these Williamson Act contracts to a less-than-significant level, while also implementing the 2035 General Plan. Because the 2035 General Plan could accommodate land use change to a non-agricultural use for parcels with current Solano County agricultural zoning designations, no feasible mitigation measures are available to reduce the potential for conflicts with existing zoning for agricultural uses. Therefore, this impact would remain **significant and unavoidable**.

**IMPACT 3.1-3**     **Land Use Conflicts with Existing Agricultural Uses.** *Implementation of the 2035 General Plan would not conflict with existing agricultural uses, which are currently ongoing grazing activities. Grazing lands are not generally associated with dust, noise, spraying, and other activities that would result in compatibility issues and these types of land uses are not known to create indirect pressure to convert grazing lands to urban uses or conflict with ongoing grazing operations. This impact would be **less than significant**.*

Urban development that expands into agricultural areas can sometimes create conflicts between agricultural practices and adjacent landowners. Agricultural operations may create risks and nuisances for residences and businesses. Conversely, incompatible land uses and the associated population create operational difficulties for agriculture. Although irrigated croplands do not occur in the Planning Area, these nuisances could occur if agricultural lands currently used for grazing were converted to croplands and sensitive uses either existed or were established adjacent to such converted croplands. The City cannot speculate at this time regarding whether property owners would elect to make this change. The potential for conflict would not exist for grazing operations.

Health risks and nuisances potentially created by agricultural operations include, but are not limited to, exposure to pesticide and herbicide applications, exposure to dust (from soil preparation), exposure to noise (from machinery and trucks), and exposure to mosquitoes breeding in irrigation ditches or ponds. Compared to cultivated agricultural lands, grazing lands are not generally associated with dust, noise, spraying, and other compatibility issues.

## Relevant Policies and Programs of the 2035 General Plan

The 2035 General Plan includes policies and programs that would reduce the potential for compatibility conflicts between the proposed land use changes and adjacent grazing activities. The City will require new developments in areas adjacent to ongoing agricultural operations to avoid introducing any compatibility issue that would reasonably be expected to pressure to prematurely convert farmland to a non-agricultural use; provide written notice to landowners and residents regarding potential noise, dust, odors, and other effects of adjacent agriculture; and incorporate design, construction, and maintenance techniques to minimize conflicts with adjacent agricultural uses, including conflicts related to odors.

Please refer to the 2035 General Plan and, in particular, the Open Space and Conservation Element for more details.

## Conclusion

The majority of land within the eastern and southeastern portion of the Planning Area is currently used for grazing. The 2035 General Plan could allow development in areas adjacent to grazing lands. These land uses are

not known to create indirect pressure to convert adjacent grazing lands to urban use. Grazing lands are not generally associated with dust, noise, spraying, and other activities that would result in compatibility issues with the adjacent land uses anticipated under the 2035 General Plan. It is possible that outdoor recreational uses may conflict with intensive grazing operations. As discussed above, the Open Space and Conservation Element requires new developments adjacent to ongoing agricultural operations to include design, construction, and maintenance techniques to minimize conflicts, including odor conflicts. Implementation of the 2035 General Plan would not result in any substantial compatibility conflicts between the proposed land use changes and adjacent grazing activities. This impact is **less than significant**.

#### Mitigation Measure

No mitigation is required.

**IMPACT 3.1-4**      **Conflict with Existing Zoning for Forest Land or Timberland or Result in the Conversion of Forest Land to Non-Forest Use.** *Implementation of the 2035 General Plan would not result in conflicts with existing zoning for forest land or timberland or result in the conversion of forest land to non-forest uses. The Planning Area is not zoned as forestland, timberland, or a Timberland Production Zone and does not contain forestry resources. There would be **no impact**.*

The Planning Area is not zoned as forest land, timberland, or a Timberland Production Zone. In addition, the Planning Area does not contain forestry resources that would be defined as forest land under Public Resources Code Section 12220(g). Therefore, implementation of the 2035 General Plan would not result in conflicts with existing zoning for forest land or timberland or result in the loss of forest land or conversion of forest land to non-forest use. There would be **no impact**.

#### Mitigation Measure

No mitigation is required.

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## 3.2 AIR QUALITY

### 3.2.1 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

#### METHODOLOGY

Construction-related emissions of criteria air pollutants (e.g., PM<sub>10</sub>) and ozone precursors (ROG and NO<sub>x</sub>) were assessed in accordance with methodologies recommended by the California Air Resources Board (ARB) and the Bay Area Air Quality Management District (BAAQMD). Emissions were modeled using the California Emissions Estimator Model (CalEEMod) Version 2013.2.2 computer model. Model default parameters were assumed where project-specific data (e.g., construction equipment types and number requirements, and maximum daily acreage disturbed) were not available at the General Plan level. Construction-related emissions were compared to applicable BAAQMD thresholds to determine significance.

Regional operational emissions of criteria air pollutants and precursors (e.g., mobile and area sources) were also quantified using the CalEEMod Version 2013.2.2 computer model. Modeling was based on buildout assumptions in the 2035 General Plan and information about vehicle trip generation from the traffic analysis prepared to support the General Plan and EIR (see Section 3.14, “Traffic and Transportation,” in this EIR). Other air quality impacts (i.e., local emissions of CO, odors, and operation-related toxic air contaminants [TACs]) were assessed in accordance with methodologies recommended by ARB and BAAQMD.

#### THRESHOLDS OF SIGNIFICANCE

For the purpose of this analysis, the following thresholds of significance, as identified by the CEQA Guidelines (Appendix G) and BAAQMD have been used to determine whether implementation of the 2035 General Plan would result in significant air quality impacts. Based on Appendix G of the State CEQA Guidelines, an air quality impact is considered significant if the proposed project would:

- ▶ conflict with or obstruct implementation of the applicable air quality plan;
- ▶ violate any air quality standard or contribute substantially to an existing or projected air quality violation;
- ▶ result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors);
- ▶ expose sensitive receptors to substantial pollutant concentrations; or
- ▶ create objectionable odors affecting a substantial number of people.

As stated in Appendix G, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the above determinations. Thus, this analysis also evaluates the proposed project’s air quality impacts pursuant to the BAAQMD 2010 CEQA Air Quality Guidelines. BAAQMD’s analysis provides substantial evidence in support of the proposed thresholds. According to BAAQMD 2010 Guidelines, a project would generate significant air quality impact if it would:

## 1. Criteria Air Pollutants

### a. Regional Significance Criteria

- Generate average daily construction emissions of ROG, NO<sub>x</sub>, and (exhaust) PM<sub>2.5</sub> that would exceed 54 pounds per day (lbs/day) or PM<sub>10</sub> exhaust emissions that would exceed 82 lbs/day, or
- Construction would not implement all of the BAAQMD's Best Management Practices for fugitive dust control and the Basic Construction Mitigation Measures, or
- Generate average daily operational emissions of ROG, NO<sub>x</sub>, and (exhaust) PM<sub>2.5</sub> that would exceed 54 lbs/day or PM<sub>10</sub> exhaust emissions that would exceed 82 lbs/day, or
- Generate annual operational emissions of ROG, NO<sub>x</sub>, and (exhaust) PM<sub>2.5</sub> that would exceed 10 tons per year (tpy) or PM<sub>10</sub> exhaust emissions that would exceed 15 tpy.

### b. Local CO Hotspots Screening

- The project would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour, and
- The project traffic would not increase traffic volumes at affected intersections to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g., tunnel, parking garage, bridge underpass, natural or urban street canyon, below-grade roadway).

## 2. Community Risk and Hazards

### a. Siting a New Receptor: Project-Level Community Risk

- Generate an excess cancer risk level of more than 10 in one million, or a non-cancer chronic or acute hazard index greater than 1.0, or
- Generate an incremental increase of greater than 0.3 µg/m<sup>3</sup> annual average PM<sub>2.5</sub> from a single source would be a significant cumulatively considerable contribution.

### b. Siting a New Receptor: Cumulative Community Risk

- The cumulative community risk plus the proposed project would generate an excess cancer risk of more than 100 in one million or chronic non-cancer hazard index greater than 10.0; or
- The cumulative community risk plus the proposed project would generate PM<sub>2.5</sub> concentrations in excess of 0.8 µg/m<sup>3</sup>.

### c. Construction Risk

- Generate excess cancer risk levels of more than 10 in one million.

## IMPACT ANALYSIS

**IMPACT 3.2-1**    **Generation of Long-Term Operational, Regional Emissions of Criteria Air Pollutants and Precursors and Consistency with Air Quality Planning Efforts.** *Future development in Suisun City would generate emissions of criteria air pollutants ( $PM_{10}$  and  $PM_{2.5}$ ) and ozone precursors, both of which adversely affect regional air quality. The 2035 General Plan would accommodate additional population and employment development, which would lead to operational (mobile-source and area-source) emissions. This impact is considered **potentially significant**.*

Air pollutant emissions associated with the 2035 General Plan were calculated based on assumptions regarding full development of General Plan land uses. The analysis takes into account vehicle travel data provided in the traffic analysis prepared to support the 2035 General Plan and this EIR, as well as area-source emissions from proposed land uses.<sup>1</sup> Emissions associated with new development under the 2035 General Plan are summarized in Table 3.2-1. Emissions of  $PM_{10}$  and ozone precursors (ROG and  $NO_x$ ) associated with land use change under the 2035 General Plan are treated as new to the region. This is a conservative (worst-case) assumption because many “new vehicle trips” may actually be moved from one part of the region to the Planning Area between present and 2035.

### Area- and Mobile-Source Emissions

Regional area- and mobile-source emissions of ROG,  $NO_x$ ,  $PM_{10}$ , and  $PM_{2.5}$  were modeled using the CalEEMod Version 2013.2.2 computer program, which is the BAAQMD-recommended model to estimate air quality emissions from land use development projects. CalEEMod can model area- and mobile-source air quality emissions based on project-specific land use types, amounts, and trip generation rates. Area-source emissions are estimated from the use of natural gas for space and water heating, wood stoves, fireplaces, landscape maintenance equipment, and consumer products. Mobile-source emissions are estimated based on the trip generation rate for each land use.

CalEEMod also accounts for the project’s location and includes region-specific default assumptions for area- and mobile-source emissions. The proposed project’s regional area- and mobile-source emissions were modeled using Solano County-specific parameters contained in CalEEMod, the proposed General Plan land use types and sizes (see Chapter 2.0, “Project Description”), and the increase in trip generation from the traffic analysis prepared for this project (see Section 3.14, “Traffic and Transportation”).

Modeled operational emissions are summarized in Table 3.2-1 for new development anticipated under the 2035 General Plan. As shown in Table 3.2-1, operational activities associated with new development anticipated under the 2035 General Plan could result in annual unmitigated emissions of up to 254 lb/day of ROG, 194 lb/day of  $NO_x$ , 57 lb/day of  $PM_{10}$ , and 38 lb/day of  $PM_{2.5}$ .

Based on the modeling conducted, operational activities would result in emissions of ROG and  $NO_x$  that exceed BAAQMD’s applicable thresholds of 54 and 54 lb/day, respectively. Thus, operational emissions of these ozone

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<sup>1</sup> Emission factors from ARB’s most current motor vehicle emissions model (EMFAC2011), as contained in the California Emissions Estimator Model (CalEEMod) Version 2013.2.2 computer model, were used to model motor vehicle activity associated with implementation of the General Plan. Transportation-related activities associated with the General Plan were determined in the traffic analysis prepared for this project (see Section 3.14, “Traffic and Transportation,” of this EIR). Vehicle miles traveled (VMT) data modeled as part of the transportation analysis were used to calculate mobile-source emissions in units of lb/day for future (2035) conditions upon buildout of the 2035 General Plan compared to existing conditions.

precursors and criteria pollutants could violate or contribute substantially to an existing or projected air quality violation, and/or expose sensitive receptors to substantial pollutant concentrations.

## Stationary-Source Emissions

The 2035 General Plan could accommodate stationary sources of pollutants that would be required to obtain permits to operate, in compliance with BAAQMD rules and regulations. These sources could include, but are not limited to, diesel-engine or gas turbine generators for emergency power generation; central-heating boilers for commercial, industrial, or large residential buildings; process equipment for light-industrial uses; kitchen equipment at restaurants and schools; service-station equipment; and dry-cleaning equipment.

The permit process would assure that these sources would be equipped with the required emission controls, and that individually, these sources would not cause a significant environmental impact. There is no available methodology to reliably estimate these emissions at this time, since no such uses are specifically proposed under the 2035 General Plan. Nonetheless, the emissions from these sources would be additive to the estimated area-source and mobile-source emissions described above.

| <b>Table 3.2-1<br/>Operational Criteria Air Pollutant and Precursor Emissions—<br/>New Development Accommodated under the 2035 General Plan</b>  |                                 |                 |                  |                   |
|--|---------------------------------|-----------------|------------------|-------------------|
| Source   | Emissions (lb/day) <sup>1</sup> |                 |                  |                   |
|  | ROG                             | NO <sub>x</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> |
| Area Sources <sup>2</sup>  | 170                             | 4               | 22               | 22                |
| Energy Sources   | 2                               | 15              | 1                | 1                 |
| Mobile Sources <sup>3</sup>  | 83                              | 176             | 34               | 14                |
| <b>Total Daily Emissions</b>   | <b>254</b>                      | <b>194</b>      | <b>57</b>        | <b>38</b>         |
| <b>BAAQMD Significance Threshold<sup>4</sup></b>   | 54 lb/day                       | 54 lb/day       | 82 lb/day        | 54 lb/day         |
| <b>Exceeds Threshold?</b>  | Yes                             | Yes             | No               | No                |
| Notes: BAAQMD = Bay Area Air Quality Management District; GPU = General Plan Update; lb/day = pounds per day; NO <sub>x</sub> = oxides of nitrogen; PM <sub>10</sub> = particulate matter less than or equal to 10 microns in diameter; PM <sub>2.5</sub> = particulate matter less than or equal to 2.5 microns in diameter; ROG = reactive organic gases;<br><sup>1</sup> Emissions modeled using the CalEEMod Version 2013.2.2 computer model, for analysis year 2035 based on trip generation rates obtained from the traffic analysis prepared for this project (see Section 3.14, "Traffic and Transportation") and the proposed General Plan land uses (see Chapter 2.0, "Project Description").<br><sup>2</sup> For this estimate, it was assumed that no wood-burning appliances would be installed.<br><sup>3</sup> Trip generation rates were obtained from the traffic analysis for the respective land uses.<br><sup>4</sup> BAAQMD operational thresholds of significance are in units of average pounds per day.<br>Refer to Appendix C for detailed assumptions and modeling output files.<br>Source: Data modeled by AECOM in 2014. |                                 |                 |                  |                   |

## Relevant Policies of the 2035 General Plan

- **Policy CCD-1.13:** The City will maintain and enhance a strong pedestrian orientation in the Downtown Waterfront Specific Plan Area through the design of buildings, streets, and sidewalks.

- ▶ **Policy CCD-1.16:** Walls and landscape buffers are not encouraged between residential and nonresidential uses unless there is no feasible alternative through site planning and design to address noise, vibration, light, glare, air pollution, and or other demonstrated physical compatibility issues between adjacent land uses.
- ▶ **Policy CCD-2.3:** The City will support the construction of new pedestrian bridges, roadways, trails, as appropriate and as funding is available to increase connectivity between Downtown and other areas of Suisun City and between Suisun City and Fairfield. As new connections are created, they should add appropriate landscaping, drainage, and pedestrian and bicycle amenities.
- ▶ **Policy CCD-4.1:** New streets shall provide comfortable travel areas for pedestrians, bicyclists, and drivers to facilitate multi-modal travel for people of all ages.
- ▶ **Policy CCD-4.2:** New developments shall provide connecting streets with short blocks that create a pedestrian-scale environment.
- ▶ **Policy CCD-4.3:** New developments shall provide direct access routes to buildings from sidewalks and parking areas for pedestrians and bicyclists.
- ▶ **Policy CCD-4.4:** The City will require visually attractive streetscapes with street trees, planting strips, attractive transit shelters, benches, pedestrian-scale streetlights in appropriate locations, and landscaping along fences and low walls, if present.
- ▶ **Policy CCD-4.9:** Benches, trash receptacles, drinking fountains, bus shelters, signage, and other improvements should be located along sidewalks and designed to enhance the visual environment and provide a welcoming place for pedestrians.
- ▶ **Policy CCD-4.10:** The City will work with Caltrans to install aesthetic and functional improvements along the SR 12 corridor, including landscaping, trees, pedestrian and bicycle pathways, and noise attenuation improvements.
- ▶ **Policy CCD-5.1:** The City will encourage – through entitlement streamlining, flexibility in development standards, fee structures, and other incentives – infill development of vacant or underutilized properties within Opportunity Areas.
- ▶ **Policy CCD-5.2:** The City will encourage creative design approaches, where necessary, to allow for mixed-use development within Opportunity Areas.
- ▶ **Policy CCD-5.4:** The Northwest Downtown and Northeast Downtown Opportunity Areas shall be designed to accommodate transit use by residents of future projects within these areas, as well as patrons and employees of future residential projects. Site planning and building design should reduce exposure to air pollutants and noise associated with the railroad and SR 12 for future residents.
- ▶ **Policy CCD-5.6:** The City encourages the construction of additional buildings to replace underutilized parking in the South Sunset Avenue Opportunity Area. Additional commercial buildings could be constructed adjacent to Sunset Avenue. New buildings should be placed close to the front property line throughout the South Sunset Avenue Opportunity Area, both north and south of SR 12.

- ▶ **Policy LU-1.1:** The City will encourage reinvestment in existing buildings and development of vacant and underutilized properties within existing neighborhoods.
- ▶ **Policy LU 1.3:** The City will guide land use change so that public gathering places, commercial services, recreational and other civic uses, and cultural destinations are within walking or biking distance, or accessible via public transit to as many Suisun City residents as feasible.
- ▶ **Policy LU-1.4:** The City will collaborate with other service providers to invest in community centers, parks, and other public facilities and services, add street trees, and make other improvements to existing neighborhoods, as funding is available.
- ▶ **Policy LU-2.2:** The City will encourage business and personal services, government and other civic uses, professional offices, and high-density residential uses to locate within the Priority Development Area.
- ▶ **Policy LU-2.3:** The City will accommodate transit-oriented, mixed-use, residential and employment development within the city's Priority Development Area between present and 2035.
- ▶ **Policy LU-2.4:** The City will proactively encourage the use of regional, state, and federal grant funding to help leverage private investment in the Priority Development Area.
- ▶ **Policy LU-3.1:** In the Northwest Downtown Opportunity Area, the City will promote transition of underutilized light industrial and service-oriented uses to entertainment, retail, higher-density residential, and professional office uses.
- ▶ **Policy LU-3.2:** In the Northeast Downtown Opportunity Area, the City will encourage development that is specifically designed with an orientation to the train station. This may include, but is not limited to higher-density residential uses and employment uses that would be accessed by rail commuters.
- ▶ **Policy LU-3.3:** In the Downtown Marina Opportunity Area, the City will promote land use change consistent with the Downtown Waterfront Specific Plan and explore the viability of recreation-oriented uses.
- ▶ **Policy LU-3.4:** In the South Sunset Avenue Area, the City will encourage additional retail, commercial service, professional office, and similar development that is oriented to, and accessible by nearby residential development.
- ▶ **Policy LU-3.5:** In the North Sunset Avenue Area, the City will facilitate higher-intensity retail, commercial service, and professional office development that is oriented to, and accessible by nearby residential development.
- ▶ **Policy LU-4.5:** The City will create a fee structure and public investment strategy that provides incentives for compact development within the Downtown Waterfront Specific Plan Area, Opportunity Areas, and land within existing City limits.
- ▶ **Policy LU-4.6:** The City will maintain development and infrastructure standards that promote infill development and allow lot consolidation for redevelopment, where necessary.

- ▶ **Policy LU-4.7:** The City will support specific plans, redevelopment plans, corridor plans, and other small area plans that promote infill development and reinvestment.
- ▶ **Policy LU-4.8:** The City will use performance-based standards to address important aspects of land use compatibility (air, noise, vibration, heavy truck traffic, light, and glare) without impeding mixed-use infill development.
- ▶ **Policy T-1.3:** The City's Level of Service policy will be implemented in consideration of the need for pedestrian and bicycle access, the need for emergency vehicle access, and policies designed to reduce vehicle miles traveled.
- ▶ **Policy T-1.6:** The City will design and operate streets and intersections to enable safe access for all users, including pedestrians, bicyclists, motorists, and transit riders of all ages and abilities.
- ▶ **Policy T-1.7:** The City will maintain a traffic impact fee program designed to collect fair-share contributions from new developments to construct off-site vehicular, bicycle, and pedestrian improvements.
- ▶ **Policy T-2.1:** The City will require and maintain an interconnected street network with short blocks to support locally available travel modes.
- ▶ **Policy T-2.2:** New streets shall be arranged in a grid or other highly connected pattern so that pedestrians, bicyclists, and drivers have multiple, direct routes to nearby destinations.
- ▶ **Policy T-2.3:** New developments shall be highly connected internally and connected with adjacent developed [areas](#).
- ▶ **Policy T-2.4:** The City will support improvements that connect existing gaps in the transportation system, and that provide visual cues directing users onto through streets.
- ▶ **Policy T-2.5:** The City prefers direct connections that allow cars, bikes, and pedestrian through traffic over "doglegs" or "T" intersections.
- ▶ **Policy T-2.9:** New commercial developments on parcels of greater than 20 acres in land area should divide larger blocks with small private through streets (Exhibit 4-9).
- ▶ **Policy T-3.1:** The City will collaborate with other local, regional, and state agencies, as well as employers to encourage carpooling, carpool parking, flexible work schedules, ridesharing, and other strategies to reduce commute period travel demand.
- ▶ **Policy T-3.2:** The City will encourage new developments and public facility investments designed to minimize vehicle trips and vehicle miles traveled.
- ▶ **Policy T-3.3:** The City will support programs to provide education, information, facilities, and incentives to encourage City employees to walk, bike, or take transit to work, as funding is available.

- ▶ **Policy T-3.4:** The City’s analytical methods, review requirements, impact fees, and investments will be designed and implemented, in part, to reduce VMT by Suisun City residents and to local commercial and employment uses.
- ▶ **Policy T-3.5:** The City’s Traffic Impact Fee Program will be designed to provide incentives for new developments that are located and designed to reduce vehicular travel demand.
- ▶ **Policy T-3.6:** New developments that would accommodate 100 full- or part-time employees or more are required to incorporate feasible travel demand management strategies, such as contributions to transit/bike/pedestrian improvements; flextime and telecommuting; a carpool program; parking management, cash out, and pricing; or other measures, as appropriate, to reduce travel demand.
- ▶ **Policy T-3.7:** The City will support regional goals to reduce per-capita GHG emissions reductions from automobiles and light-duty trucks in a way that also promotes 2035 General Plan objectives.
- ▶ **Policy T-6.1:** The City will facilitate construction and maintenance of an accessible, safe, pleasant, convenient, and integrated bicycle and pedestrian system that connects local destinations and surrounding communities. The City will support development of a safe and accessible trail network connected to the on-street bicycle and transportation system that provides transportation and recreational opportunities for Suisun City residents and employees.
- ▶ **Policy T-6.2:** The City will require design, construction, operation, and maintenance of “complete streets” that provide safe and convenient access and travel for pedestrians, bicyclists, motorists, and transit users of all ages and abilities.
- ▶ **Policy T-6.3:** The City will proactively coordinate with regional transportation and transit agencies to enhance the local transportation network in a way that encourages bicycling, walking, and transit use.
- ▶ **Policy T-6.4:** The City will collaborate with public transit agencies to provide a safe, efficient, comprehensive and integrated transit system. The City will prioritize improvements to the local bus system that connect with passenger train service.
- ▶ **Policy T-6.5:** The City will prioritize construction of bike lanes, bike paths, and pedestrian amenities, such as wider sidewalks, street lighting, and crosswalks near commercial services, retail, parks, schools, other civic uses, trails, and transit stops.
- ▶ **Policy T-6.6:** Bicycle parking shall be provided near destination land uses, such as retail, commercial and public services, parks, schools, and transit stops.
- ▶ **Policy T-6.9:** The City will encourage construction of transit amenities, such as benches, information systems, shelters, and bike racks near transit stops.
- ▶ **Policy T-6.10:** The City will support improvements designed to encourage transit, such as traffic signal priority, bus queue jump lanes at intersections, exclusive transit lanes, and other techniques, as appropriate.

- ▶ **Policy T-6.11:** The City will support transit-oriented development by reducing parking requirements and requiring improvements designed to encourage transit use in Transit Support Areas. Transit Support Areas include areas within ¼ mile walking distance of bus stops and the train station.
- ▶ **Policy T-6.12:** New building frontages shall be oriented to pedestrians. Primary pedestrian entries to nonresidential buildings should be from the sidewalk, not from parking areas.
- ▶ **Policy T-6.13:** New developments shall provide pathways that link to sidewalks, trails, streets, and adjacent transit stops.
- ▶ **Policy T-6.14:** Lockers and showers for cyclists shall be provided for new developments that would accommodate 100 or more full- or part-time employees.
- ▶ **Policy T-6.15:** The City will proactively coordinate with utility companies and other relevant service providers to establish bicycle and pedestrian travelways along power transmission lines and other utility corridors, irrigation canals and creeks, and other existing easements and rights-of-way.
- ▶ **Policy T-7.1:** Parking shall be located and designed to facilitate convenient pedestrian access to and from buildings, trails, sidewalks, and transit stops.
- ▶ **Policy T-7.2:** The City will prioritize on-street parking, shared parking, and, where appropriate, public parking garages to meet parking needs for destination land uses and reduce the need for surface parking.
- ▶ **Policy T-7.3:** New developments should optimize and make use of on-street parking spaces prior to proposing additional surface parking.
- ▶ **Policy T-7.4:** The City supports shared parking between multiple uses to the extent possible, and will provide incentives for property owners to share underused off-street parking.
- ▶ **Policy T-7.5:** New developments should unbundle the cost of parking from leases and condominium purchases.
- ▶ **Policy T-7.6:** The City will reduce parking requirements for mixed-use developments, for developments providing shared parking, for developments within ¼ mile of a bus stop or the train station, and for developments that incorporate travel demand measures.
- ▶ **Policy T-7.7:** Unless unusual circumstances warrant, the City discourages construction of new surface parking spaces in amounts greater than required by City standards.
- ▶ **Policy T-7.9:** The City may waive or relax off-site parking requirements for infill and affordable housing projects that use shared parking, on-street parking, and techniques to reduce vehicular travel demand.
- ▶ **Policy T-7.10:** The City will establish parking maximums for new developments within the Downtown Waterfront Specific Plan Area and all areas within ½ mile walking distance from the train station.
- ▶ **Policy T-7.11:** New developments that require loading areas shall provide these facilities in a way that does not conflict with pedestrian, bicycle, transit, or automobile circulation.

- **Policy PHS-3.3:** The City will require projects that could result in significant air pollutant emissions impacts projects to reduce operational emissions from vehicles, heating and cooling, lighting, equipment use, and other proposed new sources.
- **Policy PHS-3.5:** The City’s vehicle fleet will be updated over time with more fuel-efficient, low-emission vehicles.
- **Policy PHS-3.6:** The City will increase the use of low-maintenance, climate-appropriate landscaping and low-emissions landscape maintenance equipment in parks and other City-maintained landscaped areas and open space.

In addition, the Draft Climate Action Plan has several reduction measures that would have co-benefits for long-term air quality, including measures addressing energy efficiency, financing for energy efficiency and renewable energy generation improvements, appliances, lighting, land use and transportation, water conservation, solid waste management, and green infrastructure. Please refer to the Draft Climate Action Plan on file with the City for more detail.

## Conclusion

Future development accommodated under the 2035 General Plan would generate emissions of ozone precursors, PM<sub>10</sub>, and PM<sub>2.5</sub>, primarily through the operation of motor vehicles. The 2035 General Plan contains numerous goals, policies, and programs intended to reduce VMT and resulting air pollution, as well as air pollution from other operational emission sources. The City includes a wide range of policies designed to incentivize and promote compact, mixed-use development, and infill development – particularly in areas served with public transit. These types of development patterns place homes closer to destinations and amenities, reducing VMT and accommodating non-auto trips. Projects that implement General Plan policies would help to minimize air pollutant emissions. However, even with implementation of these goals, policies, and programs, operational emissions would exceed BAAQMD’s thresholds of significance and could conflict with current air quality planning efforts. Therefore, this impact would be **significant**.

## Mitigation Measure

Implementation of 2035 General Plan policies and Draft Climate Action Plan reduction measures would reduce air pollutant emissions that affect both Suisun City and the region. However, the 2035 General Plan would still result in operational emissions in excess of threshold assumptions used by BAAQMD for relevant clean air plans. There are no additional feasible policies or programs that would reduce long-term impacts associated with operational air pollutants within Suisun City below relevant thresholds. This impact is considered **significant and unavoidable**.

|                 |  |
|-----------------|--|
| IMPACT<br>3.2-2 | <p><b>Generation of Short-Term Construction-Related Emissions of Criteria Air Pollutants and Precursors.</b></p> <p><i>Criteria air pollutants and precursors resulting from construction activities accommodated under the 2035 General Plan would exceed BAAQMD’s significance thresholds of 54 lb/day for ROG and NO<sub>x</sub>. Policies in the 2035 General Plan would support compliance with BAAQMD-recommended standard construction mitigation practices. This would substantially reduce construction-generated air pollutant emissions attributable to projects accommodated under the 2035 General Plan. However, due to the large amount of total development proposed over the buildout period, construction-generated emissions of criteria air pollutants</i></p> |
|-----------------|--|

*and precursors is considered substantial, and could violate an ambient air quality standard, contribute substantially to an existing or predicted air quality violation, and/or expose sensitive receptors to substantial pollutant concentrations. As a result, this impact is considered **potentially significant**.*

Construction-related emissions are described as short-term or temporary in duration. Despite the finite period of construction related emissions for any particular project, these emissions have the potential to represent a significant air quality impact. General Plan buildout is dependent on economic, demographic, and other factors, many of which are not knowable at this time. However, individual projects brought forward under the 2035 General Plan would be reviewed by the City to ensure that development occurs in a logical manner consistent with policies in the General Plan, and that additional environmental review is conducted under CEQA, as needed.

Construction-related activities would result in emissions of criteria air pollutants (e.g., PM<sub>10</sub>) and precursors (e.g., ROG and NO<sub>x</sub>) from site preparation (e.g., demolition, excavation, grading, and clearing); exhaust from off-road equipment, material delivery vehicles, and worker commute vehicles; vehicle travel on paved and unpaved roads; and other miscellaneous activities (e.g., building construction, asphalt paving, application of architectural coatings, and trenching for utility installation).

Emissions of ozone precursors are associated primarily with exhaust from off-road construction equipment. Worker commute trips and other construction-related activities also contribute to short-term increases in ozone precursors. Emissions of fugitive PM dust (e.g., PM<sub>10</sub> and PM<sub>2.5</sub>) are primarily associated with ground-disturbing activities during site preparation (e.g., grading and excavation) and vary as a function of such parameters as soil silt content, soil moisture, wind speed, acreage of disturbance area, and VMT on- and off-site.

Exhaust emissions from diesel equipment and worker commute trips also contribute to short-term increases in PM<sub>10</sub> emissions, but to a much lesser extent. Site preparation and earthmoving activities would be the primary generator of construction-related fugitive PM<sub>10</sub> dust emissions. However, it should be noted that BAAQMD thresholds of significance for PM<sub>10</sub> and PM<sub>2.5</sub> only apply to a project's exhaust-related emissions.

The General Plan would build out between present and 2035. The construction pace and schedule would be dictated by economic conditions and cannot be determined at this time. Therefore, it was conservatively assumed that a maximum of 1/10<sup>th</sup> or roughly 10% of the new 2035 General Plan land uses would be constructed in a single year. Modeling was conducted for the year 2015 to represent a full year of construction at the earliest possible year. Construction activities occurring in future years would have lower emission factors for off-road construction equipment and on-road vehicles due to the regulatory trend of more stringent emissions standards for engines. In addition, as older equipment and vehicles are replaced by newer and cleaner engines, fleetwide emission factors would decline. Thus, reporting on emissions for 2015 represents a conservative estimate (likely to overestimate actual worst-case annual emissions).

Table 3.2-2 summarizes the estimated construction-related emissions of criteria air pollutants and ozone precursors from site preparation (e.g., grading) and building construction activities that could be accommodated under buildout of the 2035 General Plan. Construction-related air quality impacts were determined by comparing these modeling results with applicable BAAQMD significance thresholds. Refer to Appendix C for detailed modeling input parameters and results.

As summarized in Table 3.2-2, construction-related activities associated with the buildout of the reasonable worst-case year (2015) would result in annual unmitigated emissions of approximately 67 lbs/day of ROG, 56 lbs/day of NO<sub>x</sub>, 8 lbs/day of PM<sub>10</sub>, and 5 lbs/day of PM<sub>2.5</sub>.

Based on the modeling conducted, construction-related activities associated with buildout of the 2035 General Plan would result in emissions of ROG and NO<sub>x</sub> that exceed BAAQMD's significance thresholds. Taken together, or individually, buildout of land uses designated under the proposed 2035 General Plan could result in construction-related emissions of criteria air pollutants and precursors that could violate or contribute substantially to an existing or projected air quality violation, and/or expose sensitive receptors to substantial pollutant concentrations.

The 2035 General Plan includes policies designed to reduce construction-related impacts, as summarized below.

| <b>Table 3.2-2<br/>Construction-Related Criteria Air Pollutant and Precursor Emissions—<br/>New Development under the 2035 General Plan (2015)</b>   |                                    |                 |                  |                   |
|--|------------------------------------|-----------------|------------------|-------------------|
|  | Emissions (tons/year) <sup>1</sup> |                 |                  |                   |
|  | ROG                                | NO <sub>x</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> |
| Construction Activities Associated with 2035 General Plan <sup>2,3</sup>   |                                    |                 |                  |                   |
| Site Preparation <sup>4</sup>  | 0.04                               | 0.43            | 0.16             | 0.10              |
| Grading <sup>4</sup>   | 0.21                               | 2.37            | 0.35             | 0.21              |
| Building Construction  | 0.52                               | 3.62            | 0.45             | 0.26              |
| Asphalt Paving   | 0.06                               | 0.63            | 0.04             | 0.03              |
| Architectural Coatings   | 7.86                               | 0.22            | 0.05             | 0.03              |
| <b>Annual Construction Emissions</b>   | <b>8.69</b>                        | <b>7.27</b>     | <b>1.05</b>      | <b>0.62</b>       |
| <b>Average Daily Construction Emissions (lbs/day)</b>  | <b>67</b>                          | <b>56</b>       | <b>8</b>         | <b>5</b>          |
| <b>Significance Threshold (average lbs/day)</b>  | 54                                 | 54              | 82               | 54                |
| <b>Exceeds Thresholds?</b>   | Yes                                | Yes             | No               | No                |
| Notes: BAAQMD = Bay Area Air Quality Management District; GPU =General Plan Update; lb/day = pounds per day; NO <sub>x</sub> = oxides of nitrogen; PM <sub>10</sub> = particulate matter less than or equal to 10 microns in diameter; PM <sub>2.5</sub> = particulate matter less than or equal to 2.5 microns in diameter; ROG = reactive organic gases<br>Emissions totals may not sum exactly due to rounding.<br><sup>1</sup> Emissions are shown in units of tons per year unless noted otherwise.<br><sup>2</sup> No emissions were modeled for demolition activities. Existing land uses to be demolished are unknown at this time.<br><sup>3</sup> It was assumed that, on average, 10% of the total 2035 General Plan land uses would be developed annually.<br><sup>4</sup> Because of the lack of site-specific information, no cut/fill activities were assumed for site preparation and grading. It is highly likely that some components of the 2035 General Plan will require cut/fill activities and thus the PM <sub>10</sub> and PM <sub>2.5</sub> emissions are base emissions. However, BAAQMD PM <sub>10</sub> and PM <sub>2.5</sub> thresholds of significance only apply to exhaust-related emissions.<br>Refer to Appendix C for detailed input parameters and modeling results.<br>Source: Modeling performed by AECOM in 2014 |                                    |                 |                  |                   |

## Relevant Policies and Programs of the 2035 General Plan

- **Policy PHS-3.4:** The City will require implementation of applicable emission control measures recommended by the Bay Area Air Quality Management District for construction, grading, excavation, and demolition.

- ▶ **Policy CCD-2.3:** The City will support the construction of new pedestrian bridges, roadways, trails, as appropriate and as funding is available to increase connectivity between Downtown and other areas of Suisun City and between Suisun City and Fairfield. As new connections are created, they should add appropriate landscaping, drainage, and pedestrian and bicycle amenities.
- ▶ **Policy CCD-3.4:** The City will support construction of attractive civic landmarks, public artworks, and other public improvements in areas near Key Community Gateways.
- ▶ **Policy CCD-5.6:** The City encourages the construction of additional buildings to replace underutilized parking in the South Sunset Avenue Opportunity Area. Additional commercial buildings could be constructed adjacent to Sunset Avenue. New buildings should be placed close to the front property line throughout the South Sunset Avenue Opportunity Area, both north and south of SR 12.
- ▶ **Policy T-6.1:** The City will facilitate construction and maintenance of an accessible, safe, pleasant, convenient, and integrated bicycle and pedestrian system that connects local destinations and surrounding communities. The City will support development of a safe and accessible trail network connected to the on-street bicycle and transportation system that provides transportation and recreational opportunities for Suisun City residents and employees.
- ▶ **Policy T-6.2:** The City will require design, construction, operation, and maintenance of “complete streets” that provide safe and convenient access and travel for pedestrians, bicyclists, motorists, and transit users of all ages and abilities.
- ▶ **Policy T-6.5:** The City will prioritize construction of bike lanes, bike paths, and pedestrian amenities, such as wider sidewalks, street lighting, and crosswalks near commercial services, retail, parks, schools, other civic uses, trails, and transit stops.
- ▶ **Policy T-6.9:** The City will encourage construction of transit amenities, such as benches, information systems, shelters, and bike racks near transit stops.
- ▶ **Policy T-7.7:** The City discourages construction of new surface parking spaces in amounts greater than required by City standards.
- ▶ **Policy CCD-4.1:** New streets shall provide comfortable travel areas for pedestrians, bicyclists, and drivers to facilitate multi-modal travel for people of all ages.
- ▶ **Program PHS-3.2. Construction Mitigation.** The City will require new developments to incorporate applicable constructed mitigation measures maintained by the BAAQMD to reduce potentially significant impacts. Basic Control Measures are includes standard mitigation measures designed to minimize fugitive PM dust and exhaust emissions from construction activities. Additional Control Measures may be required when impacts would be significant after application of Basic Control Measures.

## Conclusion

The General Plan provides policies intended to reduce construction related emissions, including the requirement that new development incorporate applicable emission control measures recommended by BAAQMD for

construction, grading, excavation, and demolition. The City has developed a program to require standard construction mitigation, consistent with guidance from BAAQMD.

BAAQMD requires that all projects, regardless of their significance with respect to numeric thresholds of significance, to implement their Basic Construction Mitigation Measures. The City is requiring incorporation of these mitigation measures as a part of the General Plan. The current version of the BAAQMD standard mitigation measures is presented below.

BAAQMD's Basic Construction Mitigation Measures include standard mitigation measures designed to minimize fugitive PM dust and exhaust emissions from construction activities. Implementation of BAAQMD-required Basic Construction Mitigation Measures would reduce short-term, construction-related emissions.

- ▶ All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
- ▶ All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
- ▶ All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
- ▶ All vehicle speeds on unpaved roads shall be limited to 15 mph.
- ▶ All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
- ▶ Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.
- ▶ All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified visible emissions evaluator.
- ▶ Post a publicly visible sign with the telephone number and person to contact at the lead agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.

In addition to these Basic Construction Mitigation Measures, in some cases when construction emissions would be significant, involve a substantial amount of earthmoving activities, and/or be located in proximity of sensitive receptors, BAAQMD suggests the following Additional Construction Mitigation Measures to reduce construction emissions:

- ▶ All exposed surfaces shall be watered at a frequency adequate to maintain minimum soil moisture of 12 percent. Moisture content can be verified by lab samples or moisture probe.
- ▶ All excavation, grading, and/or demolition activities shall be suspended when average wind speeds exceed 20 mph.

- ▶ Wind breaks (e.g., trees, fences) shall be installed on the windward side(s) of actively disturbed areas of construction. Wind breaks should have at maximum 50 percent air porosity.
- ▶ Vegetative ground cover (e.g., fast-germinating native grass seed) shall be planted in disturbed areas as soon as possible and watered appropriately until vegetation is established.
- ▶ The simultaneous occurrence of excavation, grading, and ground-disturbing construction activities on the same area in any one time shall be limited. Activities shall be phased to reduce the amount of disturbed surfaces at any one time.
- ▶ All trucks and equipment, including their tires, shall be washed off prior to leaving the site.
- ▶ Site accesses to a distance of 100 feet from the paved road shall be treated with a 6 to 12 inch compacted layer or wood chips, mulch, or gravel.
- ▶ Sandbags or other erosion control measures shall be installed to prevent silt runoff to public roadways from sites with a slope greater than one percent.
- ▶ Minimizing the idling time of diesel powered construction equipment to two minutes.
- ▶ The project shall develop a plan demonstrating that the off-road equipment (more than 50 horsepower) to be used in the construction project (i.e., owned, leased, and subcontractor vehicles) would achieve a project wide fleet-average 20 percent NO<sub>x</sub> reduction and 45 percent PM reduction compared to the most recent ARB fleet average. Acceptable options for reducing emissions include the use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, add-on devices such as particulate filters, and/or other options as such become available.
- ▶ Use low VOC (i.e., ROG) coatings beyond the local requirements (i.e., Regulation 8, Rule 3: Architectural Coatings).
- ▶ Requiring that all construction equipment, diesel trucks, and generators be equipped with Best Available Control Technology for emission reductions of NO<sub>x</sub> and PM.
- ▶ Requiring all contractors use equipment that meets ARB's most recent certification standard for off-road heavy duty diesel engines.

However, the incorporation of BAAQMD-recommended control measures cannot be analyzed in detail for the large and diverse set of projects that could be accommodated under the General Plan. It is possible that emission control measures would be applied for certain larger projects, but emissions could still exceed BAAQMD significance thresholds. As a result, construction-related emissions could violate an air quality standard, contribute substantially to an existing or projected air quality violation, and/or expose sensitive receptors to substantial pollutant concentrations. Because of the large amount of development and potential for simultaneous construction of multiple sites, the nonattainment status of SFBAAB, and modeled emissions that exceed applicable thresholds, implementation of the 2035 General Plan could have **significant** construction-related impacts.

## Mitigation Measure

The City cannot demonstrate at this time that these measures would reduce impacts to a less-than-significant level. It is possible that construction-related emissions of criteria air pollutants and precursors could still exceed significance thresholds. Such emissions could violate or contribute substantially to an existing or projected air quality violation and/or expose sensitive receptors to substantial pollutant concentrations. The City's policies and program require compliance with standard mitigation measures recommended by the local air quality management district. Beyond this, there are no additional feasible mitigation measures available to address this significant impact. This impact is considered **significant and unavoidable**.

**IMPACT**    **Generation of Long-Term, Operational, Local Mobile-Source Emissions of CO.** *Local mobile-source emissions of CO would not be expected to substantially contribute to emissions concentrations that would exceed the 1-hour ambient air quality standard of 20 ppm or the 8-hour standard of 9 ppm. As a result, this impact would be less than significant.*

**3.2-3**

The primary mobile-source pollutant of localized concern is CO. Local mobile-source CO emissions and concentrations near roadway intersections are a direct function of traffic volume, speed, and delay. Transport of CO is extremely limited because it disperses rapidly with distance from the source under normal meteorological conditions. However, under specific meteorological conditions, CO concentrations near roadways and/or intersections may reach unhealthy levels with respect to local sensitive land uses, such as residential units, hospitals, schools, and childcare facilities.

Intersections that operate at a lower level of service (LOS) (i.e. LOS E or F) would have the potential to cause a CO hotspot, which would be a localized exceedance of the state or federal CO ambient air quality standard. LOS is a measurement of an intersection's performance based on idling time and speed of vehicles as they pass through. Therefore, intersections operating at LOS E or F would result in a greater number of vehicles idling and/or moving slowly through the intersection, thereby increasing the possibility for a CO hotspot.

BAAQMD has developed a screening threshold to determine if a project would cause an intersection to potentially generate a CO hotspot. The screening thresholds have been developed with conservative assumptions to avoid underestimating CO concentrations. Therefore, a project that would not exceed the screening thresholds would be highly unlikely to generate a CO hotspot and would not expose sensitive receptors to CO concentrations harmful to public health. According to this methodology, projects would have the potential to generate a CO hotspot if it did not contribute a substantial volume of vehicle trips to an intersection that exceeded 44,000 vehicles per hour. For intersections located in areas where vertical and/or horizontal mixing is substantially limited, the screening threshold is 24,000 vehicles per hour.

## Worst-Case Effects at a Roadway Intersection

According to the traffic analysis prepared for the 2035 General Plan (see Section 3.14, "Traffic and Transportation"), signalized roadway intersections could be reduced to LOS E or LOS F from LOS A–D under buildout (2030) conditions for both a.m. and p.m. peak hours.

The intersection of SR 12 and Pennsylvania Avenue is expected to be the most impacted of the intersections analyzed therefore its peak hourly volume under the 2035 General Plan cumulative scenario was chosen to be

compared with BAAQMD's screening threshold. It is anticipated that if the SR 12 and Pennsylvania Avenue intersection's peak hourly volume would not exceed BAAQMD's screening threshold and not cause a potential CO hotspot, no other intersection impacted by the General Plan would have a higher peak hourly volume and thus would also not generate a potential CO hotspot under 2035 General Plan conditions.

### **CO Modeling**

The traffic study evaluated affected intersections under existing and cumulative conditions, with and without the proposed project. For a conservative analysis, the cumulative plus project intersection volumes were used to compare with the BAAQMD's screening threshold. Year 2035 would account for the maximum traffic volumes from the proposed project plus regional growth. The proposed project would be built out and fully operational in year 2035 and thus using 2035 cumulatively traffic would evaluate the maximum foreseeable traffic volumes at impacted intersections. As determined by the traffic study, the highest hourly volume of vehicles at an intersection would occur under peak-hour cumulative (2035) plus proposed project conditions at the SR 12 and Pennsylvania Avenue intersection. The maximum hourly volume at this intersection would be 9,950 vehicles per hour, which would be substantially less than the 24,000 and 44,000 vehicles per hour screening threshold. Therefore, implementation of the proposed project is not expected to have the potential to generate CO hotspots. This impact would be **less than significant**.

### **Relevant Policies of the 2035 General Plan**

The 2035 General Plan includes policies and actions designed to reduce any potential for exposure of sensitive receptors to unhealthy CO concentrations from roadways and intersections:

- ▶ **Policy T-1.1:** The City will review and condition developments to maintain level of service E or better during peak travel periods, as feasible.
- ▶ **Policy T-1.2:** New developments within the Downtown Waterfront Specific Plan and Priority Development Area are exempt from the City's transportation Level of Service policy.
- ▶ **Policy T-1.4:** The City will not require analysis of direct impacts to vehicular level of service for the purpose of CEQA compliance. The City acknowledges that Caltrans and other transportation agencies may require such analysis.
- ▶ **Policy T-3.1:** The City will collaborate with other local, regional, and state agencies, as well as employers to encourage carpooling, carpool parking, flexible work schedules, ridesharing, and other strategies to reduce commute period travel demand.
- ▶ **Policy T-3.2:** The City will encourage new developments and public facility investments designed to minimize vehicle trips and vehicle miles traveled.
- ▶ **Policy T-3.3:** The City will support programs to provide education, information, facilities, and incentives to encourage City employees to walk, bike, or take transit to work, as funding is available.
- ▶ **Policy T-3.4:** The City's analytical methods, review requirements, impact fees, and investments will be designed and implemented, in part, to reduce VMT by Suisun City residents and to local commercial and employment uses.

- ▶ **Policy T-3.5:** The City’s Traffic Impact Fee Program will be designed to provide incentives for new developments that are located and designed to reduce vehicular travel demand.
- ▶ **Policy T-3.6:** New developments that would generate VMT at a lower rate per capita than the existing level are exempt from traffic impact fees.
- ▶ **Policy T-3.7:** New developments that would accommodate 100 employees or more are required to incorporate feasible travel demand management strategies, such as contributions to transit/bike/pedestrian improvements; flextime and telecommuting; a carpool program; parking management, cash out, and pricing; or other measures, as appropriate, to reduce travel demand.
- ▶ **Policy T-4.2:** The City will manage truck traffic, freight rail, and hazardous materials movements in a way that is protective of the public and environmental health, in collaboration with Caltrans, Solano County, the California Highway Patrol, the California Public Utilities Commission, and the Union Pacific Railroad.
- ▶ **Policy T-4.3:** The City will restrict truck traffic to designated routes, which include: SR 12, Main Street, Cordelia Street, Railroad Avenue, Lotz Way, Walters Road, Peterson Road, and Civic Center Boulevard. Trucks may go by direct route to and from restricted streets, where required for the purpose of making pickups and deliveries of goods, but are otherwise restricted to designated routes.
- ▶ **Policy T-6.1:** The City will facilitate construction and maintenance of an accessible, safe, pleasant, convenient, and integrated bicycle and pedestrian system that connects local destinations and surrounding communities. The City will support development of a safe and accessible trail network connected to the on-street bicycle and transportation system that provides transportation and recreational opportunities for Suisun City residents and employees.
- ▶ **Policy T-6.2:** The City will require design, construction, operation, and maintenance of “complete streets” that provide safe and convenient access and travel for pedestrians, bicyclists, motorists, and transit users of all ages and abilities.
- ▶ **Policy T-6.3:** The City will proactively coordinate with regional transportation and transit agencies to enhance the local transportation network in a way that encourages bicycling, walking, and transit use.
- ▶ **Policy T-6.4:** The City will collaborate with public transit agencies to provide a safe, efficient, comprehensive and integrated transit system. The City will prioritize improvements to the local bus system that connect with passenger train service.
- ▶ **Policy T-6.5:** The City will prioritize construction of bike lanes, bike paths, and pedestrian amenities, such as wider sidewalks, street lighting, and crosswalks near commercial services, retail, parks, schools, other civic uses, trails, and transit stops.
- ▶ **Policy T-6.6:** Bicycle parking shall be provided near destination land uses, such as retail, commercial and public services, parks, schools, and transit stops.

- ▶ **Policy T-6.7:** The City will prioritize pedestrian connections that allow children to walk safely to school, including safe, convenient locations to cross collectors, arterials, expressways, and rail lines. Key locations and connections are those where informal and unsafe routes or crossings are presently used.
- ▶ **Policy T-6.8:** The City will seek funding to construct vandal-resistant walls or making other improvements to decrease use of unsafe railroad crossings in such locations as Worley Road, Blossom Avenue, Marina Boulevard.
- ▶ **Policy T-6.9:** The City will encourage construction of transit amenities, such as benches, information systems, shelters, and bike racks near transit stops.
- ▶ **Policy T-6.10:** The City will support improvements designed to encourage transit, such as traffic signal priority, bus queue jump lanes at intersections, exclusive transit lanes, and other techniques, as appropriate.
- ▶ **Policy T-6.11:** The City will support transit-oriented development by reducing parking requirements and requiring improvements designed to encourage transit use in Transit Support Areas. Transit Support Areas include areas within ¼ mile walking distance of bus stops and the train station.
- ▶ **Policy T-6.12:** New building frontages shall be oriented to pedestrians. Primary pedestrian entries to nonresidential buildings should be from the sidewalk, not from parking areas.
- ▶ **Policy PHS-1.2:** New development shall be designed to disperse vehicular traffic onto a network of fully connected smaller roadways.

#### Mitigation Measure

No mitigation is required.

**IMPACT 3.2-4** Exposure of Sensitive Receptors to Emissions of Toxic Air Contaminants. *Implementation of the 2035 General Plan could involve generation of toxic air contaminants and exposure of sensitive receptors to substantial pollutant concentrations. This impact is considered **potentially significant**.*

Emissions of TACs during project construction consistent with the 2035 General Plan (e.g., emissions from on-site heavy-duty diesel equipment) and from project operation under the 2035 General Plan (e.g., emissions from both on-site and off-site area, stationary, and mobile sources) are discussed and their resulting levels of TAC exposure of sensitive receptors are analyzed separately below.

#### Construction-Related Emissions

Construction-related activities would result in short-term emissions of diesel PM from the exhaust of off-road heavy-duty diesel equipment for site preparation (e.g., excavation, grading, and clearing); paving; application of architectural coatings; and other miscellaneous activities. Diesel PM was identified as a TAC by ARB in 1998. The potential cancer risk from the inhalation of diesel PM, as discussed below, outweighs the potential for all other health impacts (ARB 2003).

Emissions from construction equipment would be reduced over the period of buildout of the 2035 General Plan. As older construction equipment is retired, new construction equipment enters the statewide fleet, and new emissions technology incorporated into existing and new equipment, the statewide fleet emissions rates would continue to decrease. In addition, existing regulations would have beneficial impacts related to TAC exposure over time. In January 2001, EPA promulgated a final rule to reduce emissions standards for heavy-duty diesel engines in 2007 and subsequent model years. These emissions standards represent a 90% reduction in NO<sub>x</sub> emissions, 72% reduction of nonmethane hydrocarbon emissions, and 90% reduction of PM emissions in comparison to the emissions standards for the 2004 model year. In December 2004, ARB adopted a fourth phase of emission standards (Tier 4) in the Clean Air Non-road Diesel Rule that are nearly identical to those finalized by EPA on May 11, 2004. As such, engine manufacturers are now required to meet after-treatment-based exhaust standards for NO<sub>x</sub> and PM starting in 2011 that are more than 90% lower than current levels, putting emissions from off-road engines virtually on par with those from on-road heavy-duty diesel engines.

### ***TAC Exposure to Construction-Related Emissions***

The dose to which receptors are exposed to TAC emission levels that exceed applicable standards is the primary factor used to determine health risk. Dose is a function of the concentration of a substance or substances in the environment and the duration of exposure to the substance. Dose is positively correlated with time, meaning that a longer exposure period would result in a higher exposure level for the maximally exposed individual. Thus, the risks estimated for a maximally exposed individual are higher if a fixed exposure occurs over a longer period of time.

According to the California Office of Environmental Health Hazard Assessment, health risk assessments, which determine the exposure of sensitive receptors to TAC emissions, should be based on a 70-year exposure period (OEHHA 2003). A long exposure period is used for health risk assessments due to the exposure periods associated with health risk. Construction of the proposed General Plan land uses would be temporary and short-term in nature. For a majority of projects, construction activities would last approximately 3 to 5 years, which would be approximately 7% of the total required exposure time for health risk assessments. In addition, construction activities associated with the General Plan land uses would be those of typical construction projects with intermittent and temporary construction emissions. Because the use of off-road heavy-duty diesel equipment would be temporary and intermittent, and because of the highly dispersive properties of diesel PM (Zhu et al. 2002), construction-related TAC emissions are not anticipated to expose sensitive receptors to substantial concentrations of TACs. However, because the exact location with respect to sensitive receptors and length of construction activities cannot be determined at the time of this analysis, it is conservatively assumed that certain construction activities could expose sensitive receptors to substantial TAC concentrations and this impact would be **potentially significant**.

## **Operational Emissions**

### ***Stationary Sources***

The 2035 General Plan anticipates construction of a variety of industrial, commercial, and other land uses that could represent new stationary sources. Under general plans, it is not possible to list out each type of new stationary sources to describe TAC exposure for any given project or location within the City without substantial speculation.

However, it is possible that projects developed under the 2035 General Plan would include stationary sources of TACs, such as dry-cleaning establishments, gasoline-dispensing facilities, and diesel-fueled backup generators.

These types of stationary sources, in addition to any other stationary sources that may emit TACs, would be subject to BAAQMD rules and regulations.

Thus, as discussed above, BAAQMD would analyze such sources, using health risk assessments, where necessary, based on the source's potential to emit TACs. If it is determined that the sources would emit TACs in excess of BAAQMD's applicable significance threshold, MACT or BACT would be implemented to reduce emissions. If the implementation of MACT or BACT would not reduce the risk below the applicable threshold, BAAQMD would deny the required permit. As a result, given required compliance with applicable rules and regulations, operation of stationary sources would not result in the exposure of sensitive receptors to TACs at levels exceeding BAAQMD significance thresholds.

Existing stationary sources in Suisun City are permitted and regulated to prevent land use compatibility conflicts with existing land uses. However, it is possible that new sensitive land uses developed as part of the 2035 General Plan could be sited in proximity of existing stationary sources. Therefore, it is possible that sensitive land uses part of the General Plan could locate sensitive receptors at distances from existing stationary sources that would expose them to substantial TAC concentrations. This impact with respect existing stationary sources is considered **potentially significant**.

### **Mobile Sources**

Mobile sources of TACs would be associated primarily with the operation of on-road heavy-duty diesel trucks used for any on-site commercial/industrial activities (e.g., unloading/loading). According to the ARB guidance document *Air Quality and Land Use Handbook: A Community Health Perspective*, ARB recommends avoiding the siting of new commercial trucking facilities that accommodate more than 100 trucks per day, or 40 trucks equipped with transportation refrigeration units (TRUs), within 1,000 feet of sensitive receptors (e.g., residences) (ARB 2005). But, the ARB guidance document is advisory, not regulatory. See below for rail traffic discussion.

Operational activities that require the use of diesel-fueled vehicles for extended periods, such as commercial trucking facilities or delivery/distribution areas, may generate diesel PM emissions that could expose sensitive receptors to diesel PM emissions. Although commercial and industrial uses that would be developed under the 2035 General Plan have not been specifically identified, it is likely that commercial uses developed under the General Plan would have tenants that would require large delivery and shipping trucks that use diesel fuel. The diesel exhaust PM emissions generated by these uses would be produced primarily at single locations on a regular basis (e.g., loading dock areas). Idling trucks, including TRUs, increase diesel PM levels at these locations. Occupants of nearby existing and proposed residences could be exposed to diesel exhaust PM emissions on a reoccurring basis.

ARB has adopted an idling restriction ATCM for large commercial diesel-powered vehicles, which became effective February 1, 2005. In accordance with this measure, affected vehicles are required to limit idling to no longer than 5 minutes, under most circumstances. In addition, projects that utilize TRUs as part of their operations or facilities that meet the required number of loading docks would be required to comply with the ARB's Transport Refrigeration Unit ATCM, which sets in-use emission performance standards for TRUs to limit diesel PM emissions. In addition, the 2035 General Plan contains goals, policies, and actions (see below) designed to minimize exposure of sensitive receptors to concentrations of TACs from mobile sources.

The 2035 General Plan includes a mix of land uses, including commercial, industrial, and residential uses. The ARB guidance document *Air Quality and Land Use Handbook: A Community Health Perspective* recommends avoiding

the placement of new sensitive land uses (e.g., residences and schools) within 500 feet of major freeways or high traffic roads (those freeways or urban roads with 100,000+ vehicles per day or rural roads with 50,000+ vehicles per day). Under the General Plan buildout (2035), there are no urban roads with over 100,000 vehicles per day and no rural road with over 50,000 vehicles per day (Fehr & Peers 2014). State Route 12 (SR 12) currently has an annual average daily traffic of approximately 40,500 vehicles per day, which is less than both reference volumes described above (Caltrans 2012). Although this daily volume is less than the reference volumes described above, because SR 12 is the largest roadway source in the City and for the purposes of a conservative analysis, the diesel PM concentrations from SR 12 were modeled using the AERMOD air dispersion model. Annual average vehicle volumes occurring on SR 12 in the project area were obtained from Caltrans, while emission factors associated with vehicles were obtained from EMFAC. The estimated mobile source PM<sub>2.5</sub> emissions were then input into AERMOD to model pollutant concentration levels at various distances along SR 12. The results of the modeling analysis determined that PM<sub>2.5</sub> concentrations at sensitive receptors located 10 feet away from SR 12 would be approximately 0.18 µg/m<sup>3</sup>, which is less than the BAAQMD 0.3 µg/m<sup>3</sup> threshold of significance. However, for cancer risks, in some areas, sensitive receptors located within 134 feet of SR 12 would be exposed to cancer risks of 10 excess cancer cases in a million, which would exceed BAAQMD's 10 in a million threshold of significance. Because of the infill and transit-oriented nature of the 2035 General Plan land uses, it is anticipated that sensitive receptors could be located within 134 feet of SR 12. Therefore, although the 2035 General Plan would include policies designed to avoid exposing new sensitive receptors from substantial TAC concentrations PM, it is possible that sensitive receptors located within 134 feet from SR 12 could be exposed to substantial TAC concentrations and this impact would be **potentially significant**.

### ***Rail Traffic Sources***

There is a railroad line that operates in Suisun City carrying both freight and Amtrak trains. Union Pacific Railroad (UPRR) operates both, the Capitol Corridor and the freight UPRR line. The Capitol Corridor Line and UPRR line traverses the northern boundary of the City along Railroad Avenue. Under current conditions, this portion of the UPRR line services approximately 40 to 50 trains per day. Based on one noise monitoring assignment, this included 32 daily commuter trains (i.e., Capitol Corridor) and approximately 16 daily freight trains (City of Fairfield 2011). Based another noise monitoring assignment, approximately 43 daily train trips occur through Suisun City. These train trips include passenger operations and freight transportation. The higher train count was used in this analysis, which would account for the potential increase in rail traffic attributable to the Valero Benicia by Rail Project, which anticipates two 50-car trains per day (City of Benicia 2014).

Since diesel engines are used along the railroad corridors, there is the potential to expose sensitive receptors to substantial pollutant concentrations if new sensitive receptors locate in areas adjacent to railroad lines with substantial traffic and railroad traffic increases in the future.

For TAC emissions, this analysis evaluates the impact of operations along existing railroad lines relative to proposed sensitive receptors. While the California Air Resources Land Use Handbook provides guidance for exposure of sensitive receptors to large-volume roadways, the same quantitative guidance is not available for railroads as of the writing of this document. Therefore, this section describes impacts related to exposure of sensitive receptors to train-related TACs by using conservative assumptions and methods to translate the guidance on high-volume roadways to railroad lines.

The number of daily freight and passenger trains passing through the City was determined using information from Amtrak and noise monitoring data. Freight trains are assumed to be a mix of UPRR and Burlington Northern Santa Fe Railroad (BNSF). The average horsepower for a large line haul locomotive for UP engines is 4,000 horsepower (hp) and for BNSF engines is 4,256 hp (Sangkapichai 2008), which equals an average horsepower of 4,128 hp. The average horse power for Amtrak locomotives is assumed to be 3,000.

Heavy-duty trucks were used as a proxy emission source to represent railroad TAC emissions. Daily diesel PM emissions resulting from the rail traffic described above were converted to heavy-duty truck volumes, which were then converted to typical roadway traffic using average Solano County fleet data from EMFAC for comparison with BAAQMD screening thresholds for high-volume roadways (BAAQMD 2011). The EPA Office of Transportation and Air Quality released “Emission Factors for Locomotives” in April of 2009 (EPA 2009a). The EPA locomotive emissions factors were developed in a manner that captures the national fleet percentages of the different tier engines. It is anticipated that future emissions factors would be lower than current since, with existing regulations, a greater percentage of the fleet will be higher tier (cleaner) engines in the future.

Emissions factors for trucks were calculated using the EMFAC 2007 computer model in units of grams of PM<sub>10</sub> per truck category. Truck categories used in this analysis were Light Heavy Duty Trucks (T4) (LLHDT), Light Heavy Duty Trucks (T5) (LHDT), Medium Heavy Duty Trucks (MHDT), and Heavy Heavy Duty Trucks (HHDT) The percent representation of each truck type was calculated for the total vehicle fleet and for the truck-only fleet.

The emissions estimate for railroad traffic was then used to determine the number of trucks that would be required to produce the same emissions as the railroad traffic along the UPRR line that runs adjacent to the City’s boundaries. It would take approximately 374 daily heavy duty truck (HDT) trips to produce the same amount of emissions as the railroad traffic adjacent to the City. This method determined that the rail line activity in the County would be equivalent to a road with approximately 9,574 vehicle trips per day, which was conservatively rounded up to 10,000 vehicle trips per day for purposes of this analysis.

The diesel PM equivalent daily vehicle traffic was then compared with BAAQMD’s Roadway Screening Analysis tables, which provide conservative PM<sub>2.5</sub> and cancer risk levels at various distances from roadways based on the amount of daily vehicle traffic (BAAQMD 2011). This analysis determined that sensitive receptors located within 10 feet of an east-west roadway with 10,000 vehicles per day would be exposed to PM<sub>2.5</sub> concentrations and cancer risks of 0.072 µg/m<sup>3</sup> and 1.76 excess cases in a million, respectively. It is not anticipated that 2035 General Plan land uses would be developed closer than 10 feet from the existing railroad line and PM<sub>2.5</sub> concentrations and cancer risks would decrease as receptors are located further away from the railroad line. Therefore, it is anticipated that locating sensitive receptors near the railroad line would not expose sensitive receptors to substantial TAC concentrations or health risks that would exceed BAAQMD health risk thresholds of significance. Considering this information, exposure to potential TAC emissions along the railroad is considered **less than significant**.

### ***Naturally Occurring Asbestos***

Asbestos is a naturally occurring mineral in California that is a known carcinogen (EPA 1993). Solano County is not identified as an area that contains serpentine or ultramafic rock that is common to foothill areas of the region. According to the California Geologic Survey, naturally occurring asbestos is not likely to occur in Solano County (DOC 2000). Nevertheless, if asbestos materials are discovered during construction of any General Plan components, construction activities would be required to comply with all requirements outlined in ARB’s Asbestos

Air Toxic Control Measure for Construction, Grading, Quarrying, and Surface Mining Operations and BAAQMD's BAAQMD Regulation 11, Rule 2 (Hazardous Pollutants). It is anticipated that in the unlikely case asbestos materials are encountered during earth disturbance or demolition activities, compliance with these requirements would ensure all asbestos materials are properly handled and disposed to avoid exposing sensitive receptors to substantial concentrations.

### **Relevant Policies and Programs of the 2035 General Plan**

The 2035 General Plan includes policies and actions designed to reduce exposure of sensitive receptors to concentrations of TACs and help reduce future land use incompatibilities of sources that could potentially emit TACs and exposure of sensitive uses to harmful air pollutants:

- ▶ **Policy CCD 5.7:** The City encourages attractive building façades constructed near the front property line in the North Sunset Avenue Opportunity Area in areas visible from this Key Community Gateway. Site planning and building design should reduce exposure to air pollutants and noise associated with the railroad and SR 12 for future residents.
- ▶ **Policy PHS 3.1:** The City will ensure that new industrial, manufacturing, and processing facilities that may produce toxic or hazardous air pollutants are located at an adequate distance from residential areas and other sensitive receptors, considering weather patterns, the quantity and toxicity of pollutants emitted, and other relevant parameters.
- ▶ **Policy PHS 4.2:** The City will communicate with the Bay Area Air Quality Management District to identify sources of toxic air contaminants and determine the need for health risk assessments prior to approval of new developments.
- ▶ **Policy PHS 3.3:** The City will require projects that could result in significant air pollutant emissions impacts to reduce operational emissions from vehicles, heating and cooling, lighting, equipment use, and other proposed new sources.
- ▶ **Policy PHS 3.4:** The City will require implementation of applicable emission control measures recommended by the Bay Area Air Quality Management District for construction, grading, excavation, and demolition.
- ▶ **Policy PHS 3.5:** The City's vehicle fleet will be updated over time with more fuel-efficient, low-emission vehicles.
- ▶ **Policy PHS 3.6:** The City will increase the use of low-maintenance, climate-appropriate landscaping and low-emissions landscape maintenance equipment in parks and other City-maintained landscaped areas and open space.
- ▶ **Policy PHS 10.1:** The City will assess risks associated with public investments and other City-initiated actions, and new private developments shall assess and mitigate hazardous materials risks and ensure safe handling, storage, and movement in compliance with local, state, and federal safety standards.

- ▶ **Policy PHS 10.3:** The City will require that sites containing hazardous materials or waste be remediated in conformance with applicable federal and state standards prior to new development or adaptive reuse projects that could be substantially and adversely affected by the presence of such contamination.
- ▶ **Policy PHS 10.5:** The City will require that large quantities of hazardous materials be securely contained in a manner that minimizes risk until they can be transported offsite and neutralized to a nonhazardous state and appropriately disposed.
- ▶ **Policy PHS 10.6:** The City will require that all hazardous waste transfer stations, disposal facilities, and residual repositories be sited at least 2,000 feet away from Travis AFB accident potential zones.
- ▶ **Policy PHS 10.7:** The City will prohibit the development of hazardous waste storage facilities south of SR 12 to prevent the possibility of upset in close proximity to Suisun Marsh.
- ▶ **Program PHS-3.1. Health Risk Analyses.** When development involving sensitive receptors, such as residential development, is proposed in areas within 134 feet of SR 12 or when uses are proposed that may produce hazardous air contaminants, the City will require screening level analysis, and if necessary, more detailed health risk analysis to analyze and mitigate potential impacts. For projects proposing sensitive uses within 134 feet of SR 12, the City will require either ventilation that demonstrates the ability to remove more than 80% of ambient PM<sub>2.5</sub> prepared by a licensed design professional or site-specific analysis to determine whether health risks would exceed the applicable BAAQMD-recommended threshold and alternative mitigation demonstrated to achieve the BAAQMD threshold. Site-specific analysis may include dispersion modeling, a health risk assessment, or screening analysis. For proposed sources of toxic air contaminants, the City will consult with the BAAQMD on analytical methods, mitigation strategies, and significance criteria to use within the context of California Environmental Quality Act documents, with the objective of avoiding or mitigating significant impacts.
- ▶ **Program PHS-3.2. Construction Mitigation.** The City will require new developments to incorporate applicable construction mitigation measures maintained by the BAAQMD to reduce potentially significant impacts. Basic Control Measures are designed to minimize fugitive PM dust and exhaust emissions from construction activities. Additional Control Measures may be required when impacts would be significant after application of Basic Control Measures.
- ▶ **Program PHS-3.3. Construction Mitigation for Health Risk.** Construction equipment over 50 brake horsepower (bhp) used in locations within 300 feet of an existing sensitive receptor shall meet Tier 4 engine emission standards. Alternatively, a project applicant may prepare a site-specific estimate of diesel PM emissions associated with total construction activities and evaluate for health risk impact on existing sensitive receptors in order to demonstrate that applicable BAAQMD-recommended thresholds for toxic air contaminants would not be exceeded or that applicable thresholds would not be exceeded with the application of alternative mitigation techniques approved by BAAQMD.

## Conclusion

With respect to potential exposure to asbestos, it is highly unlikely that projects will encounter naturally occurring asbestos within the planned General Plan development area. However, in the unlikely case that asbestos materials are encountered during earth disturbance or demolition activities, compliance with ARB and BAAQMD's Airborne

Toxic Control Measures (ATCM) and rules and regulations, respectively, would ensure that sensitive receptors are not exposed to substantial asbestos concentration. Compliance with existing regulations would ensure a **less-than-significant** impact.

The BAAQMD is responsible for limiting the amount of emissions that can be generated throughout the San Francisco Bay Area Air Basin (SFBAAB) by stationary sources. Specific rules and regulations have been adopted that limit emissions that can be generated by various uses and/or activities and identify specific pollution reduction measures that must be implemented in association with various uses and activities. These rules regulate not only the emissions of the state and federal criteria pollutants, but also the emissions of TACs. The rules are also subject to ongoing refinement by the BAAQMD. In general, all stationary sources with air emissions are subject to the BAAQMD's rules governing their operational emissions. Some emissions sources are further subject to regulation through the BAAQMD's permitting process. Through this permitting process, the BAAQMD also monitors the amount of stationary emissions being generated and uses this information in developing attainment plans. Applicable rules include: Regulation 2, Rule 1: General Permit Requirements; Regulation 6: Particulate Matter and Visible Emissions; Regulation 8, Rule 3: Architectural Coatings; Regulation 8, Rule 15: Emulsified Asphalt; and, Regulation 11, Rule 2: Asbestos, Demolition, Renovation and Manufacturing.

The BAAQMD analyzes sources that require a permit (e.g., performs health risk assessments) based on their potential to emit TACs. If it is determined that the project's emissions would exceed the BAAQMD's threshold of significance for TACs, the source has to implement the best available control technology for TACs (T-BACT) to reduce emissions. Residential, retail, commercial uses such as those accommodated under the 2035 typically do not require T-BACT measures because the nominal amounts of TACs generated by these uses. If a source cannot reduce the risk below the threshold of significance even after implementing T-BACT, the BAAQMD will deny the permit. This helps to prevent new problem emissions sources and reduces emissions from existing sources by requiring them to apply new technology when retrofitting. The BAAQMD's air quality permitting process applies to stationary sources; properties that are exposed to elevated levels of TACs from non-stationary sources, and the non-stationary sources themselves (e.g., on-road vehicles), are not subject to air quality permits. Further, for reasons of feasibility and practicality, mobile sources (e.g., cars, trucks, etc.) are not required to implement T-BACT even if they have the potential to expose adjacent properties to elevated levels of TACs. Rather, emissions controls on mobile sources are subject to regulations implemented at the federal and state levels by the U.S. Environmental Protection Agency (EPA) and ARB, respectively.

With respect construction-related TAC emissions, the General Plan would involve construction of land uses in infill areas that would be located in proximity of existing and future sensitive receptors. Although construction activities would be intermittent and temporary in nature, it is anticipated that in some cases construction-related TAC emissions could generate health risk impacts that exceed BAAQMD thresholds of significance. Program PHS-3.2 requires application of construction mitigation, which would reduce impacts, and PHS-3.3, which requires Tier 4 engine emission standards, which have been shown to reduce PM emissions by more than 90% from current levels or site-specific analysis and mitigation with clear performance outcomes tied to BAAQMD-recommended TAC thresholds. The screening distance is derived from conservative TAC and health risk analysis prepared by BAAQMD (BAAQMD 2010).

The General Plan includes policies that would require buffers between sensitive land uses and sources of TACs. Program PHS-3.1 requires site-specific analysis for sensitive receptors that are proposed in areas where there could be potentially significant TAC-related impacts, a menu of effective mitigation, and specific performance standards

that would substantially reduce impacts and avoid significant impacts. The City has provided for the review and conditioning of projects, including buffering and other measures to promote compatibility of adjacent land uses.

Implementation of the 2035 General Plan policies would substantially reduce TAC emissions from construction and operational activities. It is anticipated that with implementation of the proposed General Plan policies and programs and existing regulations, any potential exposure of sensitive receptors to substantial TAC concentrations would be **less than significant**.

#### Mitigation Measure

No mitigation is required.

**IMPACT 3.2-5**    **Exposure of Sensitive Receptors to Emissions of Odors.** *The City does not anticipate major sources of odors as a part of implementation of the 2035 General Plan. The impact is considered **less than significant**.*

The human response to odors is subjective, and sensitivity to odors varies greatly among the public. Minor sources of odors, such as exhaust from mobile sources, garbage collection areas, and charbroilers associated with commercial uses, are not typically associated with numerous odor complaints, but are known to have some temporary, less concentrated odorous emissions. Major and minor sources of odors are discussed separately below.

#### Major Sources of Odors

The following land use types are widely considered major sources of odors: wastewater treatment and pumping facilities, chemical manufacturing facilities, sanitary landfills, fiberglass manufacturing facilities, transfer stations, painting/coating operations (e.g., auto body shops), composting facilities, food processing facilities, confined animal facilities, asphalt batch plants, rendering plants, metal smelting plants, and coffee roasters. This list is meant not to be entirely inclusive, but to act as general guidance. Odor sources in the City would be expected to include cooking and food processing facilities, other industrial sources, wastewater treatment plants, and other sources. The City has anticipated the possibility that sensitive receptors may be exposed to sources of odor during implementation of the General Plan.

#### Minor Sources of Odors

Minor sources of odors associated with the 2035 General Plan would be associated with the construction of the proposed land uses. The predominant source of power for construction equipment is diesel engines. Exhaust odors from diesel engines, as well as VOC emissions associated with asphalt paving and the application of architectural coatings may be considered offensive to some individuals. Similarly, diesel-fueled locomotives traveling along railroad lines, and diesel-fueled trucks traveling on local roadways would produce associated diesel exhaust fumes.

However, because odors associated with diesel fumes would be temporary and would disperse rapidly with distance from the source, construction-generated and mobile-source odors would not result in the frequent exposure of on-site receptors to objectionable odor emissions.

## Conclusion

Compliance with BAAQMD required construction mitigation measures and rules and regulations would ensure any minor sources of odors (e.g., construction equipment, highways, railroads) would not result in exposure of sensitive receptors (on- or off-site) to excessive project-generated odor sources, with implementation of the 2035 General Plan. This impact would be **less than significant**.

## Mitigation Measure

No mitigation is required.

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## **3.3 BIOLOGICAL RESOURCES**

### **3.3.1 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES**

#### **METHODOLOGY**

This analysis of impacts on biological resources associated with implementing the 2035 General Plan is based primarily on the literature review, review of California Natural Diversity Database (CNDDB) and California Native Plant Society (CNPS) records, and a reconnaissance-level field survey completed for and documented in the 2035 General Plan Biological Resources Background Report (Volume II). Information sources used in this analysis include:

- ▶ Multisource Land Cover Data for the State of California (CAL FIRE 2002).
- ▶ 2012 Public Draft Solano Multispecies Habitat Conservation Plan (SMHCP) (SCWA 2012);
- ▶ Gentry-Suisun DEIR (City of Suisun City, 2007b);
- ▶ Railroad Road Widening and Realignment FEIR (City of Suisun City, 2004);
- ▶ Walters Road West Project DEIR and FEIR (City of Suisun City 2007a);
- ▶ Wetlands Assessment for the Suisun City Mixed Use Project (Gallaway Consulting 2009); and
- ▶ Johnson Trust and Peterson Trust Biological Constraints Analysis (LSA 2006).

The 2035 General Plan land use plan was compared against existing biological conditions (i.e., environmental baseline) to determine potential impacts on biological resources that would result from build out of the 2035 General Plan.

Goals and policies pertaining to management and protection of biological resources in the City and Sphere of Influence are mostly found in the Open Space and Conservation Element of the 2035 General Plan. While the General Plan policies and programs promote development that avoids or minimizes impacts on biological resources to the extent feasible, they do not necessarily ensure that substantial adverse effects would not occur within areas designated for development. The impact analysis in this EIR considers implementation of goals, policies, and programs in the General Plan.

#### **THRESHOLDS OF SIGNIFICANCE**

Based on Appendix G of the State CEQA Guidelines, the proposed project would result in a potentially significant impact on biological resources if it would:

- ▶ have a substantial adverse effect, either directly or through habitat modification, on any species identified as a candidate, sensitive, or special-status species (including rare, threatened, or endangered species) in local or regional plans, policies, or regulations, or by CDFW or USFWS;
- ▶ have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by CDFW or USFWS;
- ▶ have a substantial adverse effect on Federally protected waters of the United States, including wetlands, as defined by Section 404 of the CWA through direct removal, filling, hydrological interruption, or other means;

- ▶ interfere substantially with the movement of any native resident or migratory wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- ▶ conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance;
- ▶ conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan; or
- ▶ substantially reduce the habitat of a fish or wildlife species; cause a fish or wildlife population to drop below self-sustaining levels; threaten to eliminate a plant or animal community; or substantially reduce the number or restrict the range of an endangered, rare, or threatened species.

## IMPACT ANALYSIS

### IMPACT 3.3-1 Loss and Degradation of Special-status Plant Habitat and Potential Loss of Special-status Plants

*Implementing the 2035 General Plan would allow conversion of habitat for special-status plant species, which could result in loss of special-status plants either through direct removal or through habitat degradation. This impact would be **potentially significant**.*

Implementation of the 2035 General Plan development could result in direct removal or degradation of habitat known to be occupied by federally listed Contra Costa goldfields, and CDFW rare plant ranked species alkali milk-vetch, pappose tarplant, Carquinez goldenbush, Delta tule pea, Mason's Lilaeopsis, Suisun Marsh aster, and saline clover. Besides the potential to remove known occupied habitat of Contra Costa goldfields, implementing the 2035 General Plan would allow development within areas identified as Contra Costa goldfields core population areas in the SMHCP, areas designated as critical habitat for Contra Cost goldfields by USFWS, and areas included within the Jepson Prairie core area identified in the vernal pool recovery plan (USFWS 2005). Vernal pool recovery plan core areas are considered vital to the recovery of the listed species found there, Contra Costa goldfields in this case, and USFWS has high preservation goals for these areas. Loss of suitable habitat for 16 other special-status plant species (see Table 3.3-1) known to occur in the vicinity of the planning area could also result from buildout of the 2035 General Plan. Loss of suitable habitat could result in direct removal of these species. In addition to direct removal, habitat modification and fragmentation could degrade habitat quality to a degree that it is no longer suitable for special-status plants to regenerate and these plant populations could eventually die out. Indirect impacts could result from pollutants transported by urban runoff and other means, airborne particulates, changes in vegetation as a result of changes in land use and management practices, altered hydrology from the construction of adjacent development and roadways, habitat fragmentation, and the introduction of invasive species or noxious weeds from surrounding development. This impact would be **potentially significant**.

## Relevant Policies and Programs of the 2035 General Plan

- ▶ **Program OSC-1.1: Preservation through Site Planning and Design.** The City will maintain data on biological resources and natural habitats. The City will require a review of biological resource information for new developments that could adversely affect potentially significant biological resources. The types and significance of biological resources present will be reviewed as part of the development entitlement process. As part of this review, the City will determine whether preservation of resources is feasible within the context

of the project site planning and design process. The City will work proactively with applicants to identify opportunities to preserve important biological resources with thoughtful planning and design approaches. Where feasible, the City will require preservation of biological resources within site planning and design as a condition of project approval.

- ▶ **Program OSC-1.3: Biological Review for New Developments.** The City will require a biological review and analysis for new developments that could adversely affect potential special-status species habitat. If, after examining all feasible means to avoid impacts to potential special-status species habitat through project site planning and design, adverse effects cannot be avoided, then impacts shall be mitigated in accordance with guidance from the appropriate state or federal agency charged with the protection of the subject species, including surveys conducted according to applicable standards and protocols, where necessary, implementation of impact minimization measures based on accepted standards and guidelines and best available science, and compensatory mitigation for unavoidable loss of sensitive and special-status species habitats through preservation and enhancement of existing populations, creation of new populations through seed collection or transplantation, and/or restoring or creating suitable replacement habitat in sufficient quantities to offset the loss of sensitive or occupied habitat and individuals. Participation in the SMHCP, if adopted, will be the preferred mitigation method. Purchase of mitigation credits at an agency-approved mitigation bank (i.e., approved by the agency with jurisdiction over the affected species or habitat) in Solano County, will also be acceptable for compensatory mitigation. If participating in the SMHCP, performance standards identified in the SMHCP for the affected species and habitat will apply. If not participating in the SMHCP the performance standards will be based on established guidelines and the best available science and result in no net loss of special-status species or sensitive habitat in the County. If the project would result in take of state or federally listed species, then the City will require project proponent/s to obtain take authorization from the U.S. Fish & Wildlife Service (USFWS) or the California Department of Fish and Wildlife (CDFW), as appropriate, depending on species status, and comply with all conditions of the take authorization. The City will require project applicants to develop a mitigation and monitoring plan to compensate for the loss of special-status species and sensitive habitats. The mitigation and monitoring plan will describe in detail how loss of special-status species or sensitive habitats shall be avoided or offset, including details on restoration and creation of habitat, compensation for the temporal loss of habitat, success criteria ensuring habitat function goals and objectives are met and that target special-status plant species are established, performance standards to ensure success, and remedial actions if performance standards are not met. The plan will include detailed information on the habitats present within the preservation and mitigation areas, the long-term management and monitoring of these habitats, legal protection for the preservation and mitigation areas (e.g., conservation easement, declaration of restrictions), and funding mechanism information (e.g., endowment).
- ▶ **Program OSC-1.4: Habitat Conservation Areas.** The City will require that compensatory mitigation for unavoidable impacts to special-status plant and wildlife habitat be completed through preservation and restoration of in-kind habitat within the City's Sphere of Influence, where appropriate and feasible. The City will work proactively to identify large contiguous blocks of habitat to serve as habitat conservation areas that can be used for mitigation. High priority will be given to preserving and restoring habitats adjacent to the Suisun Marsh Management Areas and within the Travis Safety Easement. If sufficient in-kind habitat is not available within the City's Sphere of Influence, compensatory mitigation will be required within Solano County as near as possible to the City's Sphere of Influence. Habitat conservation areas will be subject to a permanent covenant, such as a conservation easement or fee title, and shall include an ongoing maintenance

agreement with a third-party, nonprofit conservation organization (Conservation Operator), with the City and CDFW named as third-party beneficiaries. The Conservation Operator shall be a qualified conservation easement land manager, such as a land trust or other qualified organization that manages land as its primary function. Additionally, the Conservation Operator shall be a tax-exempt nonprofit conservation organization that meets the criteria of Civil Code Section 815.3(a) and shall be selected or approved by the City, after consultation with CDFW or USFWS, as appropriate depending on status of the species for which the Habitat Conservation Area is being established. The City, after consultation with the appropriate agency and the Conservation Operator, shall approve the content and form of the conservation easement. The City, CDFW and/or USFWS (depending on species status), and the Conservation Operator shall each have the power to enforce the terms of the conservation easement. The Conservation Operator shall monitor the easement in perpetuity to ensure compliance with the terms of the easement. The City shall establish an endowment or some other financial mechanism that is sufficient to fund in perpetuity the operation, maintenance, management, and enforcement of the conservation easement. If an endowment is used, either the endowment funds shall be submitted to the City to be distributed to an appropriate third-party nonprofit conservation agency, or they shall be submitted directly to the third-party nonprofit conservation agency in exchange for an agreement to manage and maintain the lands in perpetuity. The Conservation Operator shall not sell, lease, or transfer any interest of any conservation easement or mitigation land it acquires without prior written approval of the City and CDFW/USFWS (depending on species status). The City Planning Department shall ensure that mitigation habitat established for impacts on habitat within the City's Planning Area is properly established and is functioning as habitat by conducting regular monitoring of the mitigation site(s) for the first 10 years after establishment of the easement.

- ▶ **Policy OSC-2.1:** The City will coordinate environmental review and mitigation requirements with the SMHCP.
- ▶ **Policy OSC-2.2:** The City will support the use of mitigation fees from the SMHCP to fund preservation and restoration elements of the City's conservation and open space strategy.
- ▶ **Policy OSC-2.3:** The City will require that new developments comply with relevant conservation measures detailed within the Conservation Strategy chapter of the SMHCP, as applicable.
- ▶ **Program OSC-2.1: Conservation Planning.** The City, in collaboration with other participating agencies, will participate in development, adoption, and implementation of the SMHCP. Mitigation and conservation measures from the SMHCP will be incorporated into the City's monitoring and implementation of the General Plan, as appropriate.
- ▶ **Policy OSC-3.4:** New developments shall control debris, sediment, and the rate and dispersal of runoff before drainage into watercourses and Suisun Marsh through the incorporation of erosion control measures.
- ▶ **Policy OSC-3.5:** New developments adjacent to watercourses, Suisun Slough, and Suisun Marsh shall include buffer areas, as needed, to avoid flood hazards, protect water quality, and preserve habitat for wildlife.
- ▶ **Policy OSC-3.6:** The City will implement relevant policies of the Suisun Marsh Protection Plan to aid in protecting and restoring tidal marsh lands.

## Conclusion

Successful implementation of the policies and programs of the 2035 General Plan would avoid, minimize, or compensate for potential impacts on special-status plants and their habitat because it would require new developments to identify and avoid special-status plant populations and their habitats to the extent feasible and to mitigate unavoidable impacts in coordination with state and federal agencies, which use standards and protocols designed to mitigate special-status plant impacts to less-than-significant levels through preservation and enhancement of existing populations, creation of new populations through seed collection or transplantation, and/or restoring or creating suitable habitat in sufficient quantities to offset the loss of occupied habitat and individuals. The 2035 General Plan programs and policies require new projects to mitigate unavoidable impacts on special-status plant species covered in the SMHCP in consistency with the provisions of the SMHCP Conservation Strategy. The Conservation Strategy of the draft SMHCP includes performance standards and design guidelines, as well as compensatory mitigation requirements to ensure occupied Contra Costa goldfields habitat is avoided to the extent feasible, that the majority of occupied habitat present is preserved in perpetuity, and that populations removed by discretionary projects are replaced through establishment of new populations. Special-status plant species covered under the SMHCP that could be affected by implementation of the 2035 General Plan are alkali milk-vetch, vernal pool smallscale, Suisun thistle, soft birds-beak, Bogg's Lake hedge hyssop, Contra Costs goldfields, legenera, and Mason's lilaeopsis. The SMHCP also requires compensation for loss of suitable habitat in Contra Costa goldfields core population areas regardless if they are occupied or not. Specific mitigation requirements, including compensatory mitigation ratios, in the current draft SMHCP Conservation Strategy are provided in Appendix D. Although development under the General Plan could result in loss of suitable and occupied habitat for special-status plants, the 2035 General Plan land use design would ensure the majority of potential habitat would remain in open space land uses for conservation of natural resources. With the implementation of the above mentioned policies and programs, along with policy diagrams in the 2035 General Plan, the impact is considered **less than significant**.

## Potential Impact of the Mitigation Attracting Hazardous Wildlife to the Travis Air Force Base Flight Path

Habitat creation and restoration in the General Plan designated conservation areas is intended to compensate for habitats that would be removed as a result of land use changes approved through implementation of the 2035 General Plan. Special-status plant mitigation in the vicinity of Travis Air Force Base would consist of preserving existing valley floor grassland habitat and existing special-status plant populations, creating or restoring ephemeral wetlands (e.g., vernal pools), and transplanting or reseeding special-status plants in created or restored habitats. Special-status plant habitat mitigation would be designed specifically to replace the lost habitat functions and acreage of existing habitats and plant populations removed as a result of land use changes approved under the 2035 General Plan. General Plan and habitat mitigation plans would have to include a monitoring program and success criteria ensuring habitat function goals and objectives are met and that target special-status plant species are established.

Habitat creation or restoration in the Travis Safety Easement, or other areas within 10,000 feet of the base, could raise concerns about attracting wildlife that would result in a potential safety hazard for aircraft flights at Travis Air Force Base from high-speed collisions with birds or the ingestion of birds into aircraft engines. Damage or potential damage caused by birds and other wildlife is termed a "strike" or "strike hazard." Use of the area surrounding Travis Air Force Base by wildlife considered hazardous to aircraft is not expected to increase as a result of implementing the programs and policies of the 2035 General Plan, because habitat mitigation within the

planning area would only replace habitat types that already exist in the area and would not result in a change in the types of habitat present in the vicinity of Travis Air Force Base and would not make the area more attractive to hazardous wildlife. For example, mitigation habitat would not result in converting upland or ephemeral wetland habitats that are less attractive to hazardous wildlife to perennial wetlands or riparian habitats that are more attractive.

### Mitigation Measure

No mitigation is necessary.

**IMPACT 3.3-2** **Loss and Degradation of Habitat for Special-status Wildlife Species and Potential Direct Take of Individuals** *Implementing the 2035 General Plan would allow conversion of undeveloped land that currently supports known occupied and potential habitat for special-status wildlife species to residential, commercial, and other developed land uses. Therefore, buildout of the 2035 General Plan would result in loss and degradation of suitable habitat for several special-status wildlife species and could result in take of state and federally listed wildlife species and loss or displacement of special-status wildlife populations. This impact would be **potentially significant**.*

Implementing the 2035 General Plan could result in the loss of occupied and suitable habitat for a number of special-status wildlife species, as noted in Table 3.3-2 of the Biological Resources Background Report (Volume II). Special-status species that could be adversely affected by buildout of the General Plan consist of vernal pool branchiopods, western pond turtle, California tiger salamander, nesting raptors and other birds, fish (e.g., steelhead, Chinook salmon, and green sturgeon), salt marsh harvest mouse, and Suisun shrew. Potential impacts on these species are discussed below individually or in related groups.

### Western Pond Turtle

Implementing the 2035 General Plan would accommodate development on properties that support freshwater and brackish wetlands that provide potential habitat for western pond turtle. Western pond turtles generally nest in upland habitats up to 1,300 feet (Jennings and Hayes 1994) from their aquatic habitat. Development in or adjacent to suitable aquatic habitats could result in death or displacement of western pond turtles through loss or degradation of habitat. Indirect impacts could result from changes in hydrology, reduced water quality from pollutants in urban runoff, isolation of aquatic habitat from upland breeding habitat, and increased mortality due to vehicle strikes; human harassment, collection, or injury; or predation from domestic animals. This impact would be **potentially significant**.

### Vernal Pool Branchiopods

Implementing the 2035 General Plan would allow development in areas that support vernal pools that have potential to support vernal pool fairy shrimp, vernal pool tadpole shrimp, and Conservancy fairy shrimp. Portions of the planning area are within areas designated as critical habitat for these species by the USFWS, and within the Jepson Prairie and Suisun Marsh core areas identified in the vernal pool recovery plan (USFWS 2005). Vernal pool recovery plan core areas are considered vital to the recovery of the listed species found there (e.g., vernal pool fairy shrimp, vernal pool tadpole shrimp, and Conservancy fairy shrimp) and USFWS has high preservation goals for these areas. Conversion of vernal pool habitat to developed land uses would result in direct take of vernal pool branchiopods listed under the ESA if they are present. In addition, development in areas adjacent to

vernal pool habitat could result in indirect impacts on vernal pool species through habitat degradation and fragmentation. The USFWS generally considers vernal pool habitats within 250 feet of development to be subject to indirect effects that could be deleterious to vernal pool branchiopods, such as hydromodification, loss of habitat connectivity, and degradation of water quality. The direct removal of habitat and potential degradation of retained habitat could have substantial adverse effects on listed vernal pool branchiopods. This impact would be **potentially significant**.

### **California Tiger Salamander**

Implementing the 2035 General Plan would allow development in areas that support vernal pools that could provide suitable breeding habitat for California tiger salamander, and in grasslands that provide potential upland habitat for this species. Conversion of suitable wetland or upland habitat could result in direct take of individuals if they are present. Filling breeding habitat could result in loss of eggs and larvae, which would also constitute take. Indirect impacts on California tiger salamander could result from development adjacent to aquatic habitat through exposure to herbicides, pesticides, and other toxins; and altered hydrology. Hydromodification that increases hydration periods, such as urban runoff, could promote invasion of predators, such as fish or bullfrogs, into aquatic breeding habitat. Alternatively, if hydration periods are decreased, then the affected habitat may not remain inundated long enough for California tiger salamander eggs and larvae to complete development and metamorphosis. In addition, development within 1.3 miles of breeding habitat could disconnect breeding habitat from upland habitat required for the majority of the California tiger salamander life cycle and result in increased mortality due to vehicle strikes, predation, and interactions with humans (e.g., human collecting, handling, harassment). Reduction of available upland habitat could cause salamanders to be above ground longer looking for refuge leaving them vulnerable to desiccation and predation. The direct removal of habitat and potential degradation of retained habitat could have substantial adverse effects on California tiger salamander. This impact would be **potentially significant**.

### **Special-Status Birds**

A number of special-status bird species have potential to nest and forage in the planning area, as noted in Table 3.3-2 of the Biological Resources Background Report (Volume II). Implementing the 2035 General Plan would accommodate development in areas that currently support grassland and emergent wetland (i.e., marsh) habitats, as well as scattered trees, that could support nesting birds. Species potentially nesting in trees in the planning area include Swainson's hawk, white-tailed kite, and loggerhead shrike. Burrowing owl is a ground (underground burrows) nesting species that could be found in grassland habitats. Marsh nesting species include tricolored blackbird, common yellowthroat, California black rail, California clapper rail, and Suisun song sparrow. Northern harrier is a ground nesting species that could be found in grassland or marsh habitats in the planning area.

Areas within the City's Sphere of Influence that would be opened to possible development include areas of grassland habitat identified as Swainson's hawk priority conservation areas in the Solano General Plan and SMHCP. While most of the documented Swainson's hawks nest sites in the County are located in the croplands northeast of Travis AFB, the grasslands in the City's eastern Sphere of Influence provide important foraging habitat for Swainson's hawk. Removal of substantial acreage of grassland foraging habitat could reduce the small mammal prey base for Swainson's hawks and other raptors. Large raptors generally require large areas of suitable foraging habitat and a reduced prey base could eventually lead to displacement of some nesting Swainson's hawks if sufficient foraging habitat is no longer available to support current local population numbers.

The 2035 General Plan land use design would restrict development in or immediately adjacent to emergent wetland vegetation, therefore, substantial acreage of marsh habitat that provides year round habitat to San Francisco common yellowthroat, California black rail, California clapper rail, and Suisun song sparrow would not be removed and these species would not be displaced from marsh habitats surrounding the planning area in large numbers resulting in declines in local population numbers. However, removal of suitable marsh and grassland habitat and individual trees could result in mortality of individuals and nest abandonment of the special-status bird species discussed here. In addition, construction disturbances near active nest sites could cause adults to abandon their nests resulting in mortality of chicks and eggs. The loss of special-status birds, their eggs, or young; either through direct removal or indirect impacts resulting in nest abandonment; or loss of foraging habitat in quantities that result in displacement of Swainson's hawks would be **potentially significant** impacts.

### **Special-status Fish**

No direct impacts on suitable habitat for special-status fish species would result from implementing the 2035 General Plan. However, development adjacent to Suisun Slough and connected waterways could result in indirect impacts on spawning habitat for special-status fish species. Potential indirect impacts include impacts on water quality through sediment and pollution in urban runoff, erosion, changes in vegetation in and along spawning channels as a result of vegetation management or hydromodification, changes in flow volume from urban runoff and increased impervious surfaces, and changes in water temperature. Indirect impacts would be **potentially significant**.

### **Salt Marsh Harvest Mouse and Suisun Shrew**

While the 2035 General Plan is designed to avoid development in most areas supporting marsh habitat, the plan would still allow development in some areas containing suitable marsh habitat for salt marsh harvest mouse and Suisun shrew. Development in study areas 1, 2, 4, and 17 could result in loss of habitat occupied by these species and result in direct mortality (i.e., take) of individuals. Suisun Marsh harvest mouse also relies on upland habitat adjacent to their marshland homes to escape highest tides. Therefore removal of grassland habitat, or marsh grassland transition zones, immediately adjacent to suitable marsh habitat could also result in take of Salt Marsh harvest mouse or result in eventual mortality or displacement due to loss of upland escape habitat. Suisun shrew also requires upland habitat to escape prolonged flood periods. Adjacent grassland habitat also provides movement corridors between patches of marsh habitat allowing genetic exchange and access to additional food sources. Development that eliminates connectivity between suitable marsh habitat patches could be detrimental to local populations; however, this is not expected to happen as a result of development under the General Plan because suitable salt marsh habitat within the planning area is at the edge of Suisun Marsh and 2035 General Plan land use design would restrict development in or immediately adjacent to the marsh and would give high priority to preserving and restoring habitats adjacent to the Suisun Marsh Management Areas. Development adjacent to occupied habitat could result in indirect impacts on both these species from habitat fragmentation, introduction of predators, pollution, light and noise disturbance, and changes in vegetation caused by introduced plant species, vegetation management, or hydromodification. This impact would be **potentially significant**.

### **Relevant Policies and Programs of the 2035 General Plan**

- **Policy OSC-1.1:** The City will require biological resources investigations for proposed developments that could adversely affect potential wildlife movement corridors to determine the value and importance of such

corridors to daily and/or seasonal movement and dispersal of local wildlife and identify measures to minimize and avoid adverse effects on wildlife movement.

- ▶ **Policy OSC-1.2:** New developments in areas with environmentally significant features, such as waterways, riparian habitats, and stands of mature trees shall preserve and incorporate those features into project planning and design, to the greatest extent feasible.
- ▶ **Policy OSC-1.3:** The City will protect and preserve natural watercourses and drainage channels, particularly along open space areas.
- ▶ **Policy OSC-1.4:** New development shall preserve and incorporate into site planning natural drainages that could support riparian habitat to the greatest extent feasible.
- ▶ **Policy OSC-1.5:** New developments shall avoid placing any temporary or permanent barriers within wildlife movement corridors, if they are determined to exist on-site.
- ▶ **Policy OSC-1.6:** New developments shall be designed to avoid fragmentation or disruption of the Jepson Prairie-Suisun Marsh corridor and the City will ensure that land use change in areas near this corridor does not interrupt natural wildlife movement or migration through this area.
- ▶ **Policy OSC-1.7:** The City will preserve fish and wildlife habitats along Suisun Slough and tributary watercourses.
- ▶ **Policy OSC-1.8:** Roads, water lines, sewer lines, drainage facilities, and other public facilities constructed to serve development shall be located and designed to avoid substantial impacts to stream courses, associated riparian areas, and wetlands, to the greatest practical extent ~~feasible~~.
- ▶ **Policy OSC-1.9:** The City will support cooperative restoration, development, and promotion of natural resources with other public agencies with an interest in Suisun City's water and wildlife assets.
- ▶ **Policy OSC-1.10:** The City will maintain and expand the system of existing parks and recreational open spaces, in part, to provide habitat for wildlife.
- ▶ **Program OSC-1.1: Preservation through Site Planning and Design.** The City will maintain data on biological resources and natural habitats. The City will require a review of biological resource information for new developments that could adversely affect potentially significant biological resources. The types and significance of biological resources present will be reviewed as part of the development entitlement process. As part of this review, the City will determine whether preservation of resources is feasible within the context of the project site planning and design process. The City will work proactively with applicants to identify opportunities to preserve important biological resources with planning and design approaches. Where feasible, the City will require preservation of biological resources within site planning and design as a condition of project approval.
- ▶ **Program OSC-1.2: Wetlands and Riparian Buffers.** Through review of proposed private and public projects near wetlands and riparian areas, the City will require buffering to protect these important habitats. Setbacks will be included as a part of conditions of approval for proposed projects. The depth of the setback shall be determined based upon site-specific conditions, habitat requirements of species that may use the

setbacks, and communication with appropriate trustee and responsible agencies, such as the California Department of Fish & Wildlife, the U.S. Army Corps of Engineers, and the U.S. Fish and Wildlife Service. Depending on the vegetation type, ongoing management of buffers may be necessary to address invasive species, human disturbance, and to sustain habitat and water quality functions. Buffers should be subject to a permanent covenant, such as a conservation easement, and shall include an ongoing maintenance agreement with a land trust, such as the Solano Land Trust, or other qualified nonprofit conservation organization. Low-impact recreation could be allowed in buffer areas so long as impacts to these sensitive habitats are avoided or fully mitigated using design features to avoid indirect impacts, fencing and/or signage to exclude public access in environmentally sensitive areas, siting recreational amenities away from sensitive habitats at the outside edge of the buffer, and implementing best management practices. Human and pet disturbance in sensitive habitat areas should be discouraged as a part of buffer and project design.

- ▶ **Program OSC-1.3: Biological Review for New Developments.** The City will require a biological review and analysis for new developments that could adversely affect potential special-status species habitat. If, after examining all feasible means to avoid impacts to potential special-status species habitat through project site planning and design, adverse effects cannot be avoided, then impacts shall be mitigated in accordance with guidance from the appropriate state or federal agency charged with the protection of the subject species, including surveys conducted according to applicable standards and protocols, where necessary, implementation of impact minimization measures based on accepted standards and guidelines and best available science, and compensatory mitigation for unavoidable loss of sensitive and special-status species habitats through preservation and enhancement of existing populations, creation of new populations through seed collection or transplantation, and/or restoring or creating suitable replacement habitat in sufficient quantities to offset the loss of sensitive or occupied habitat and individuals. Participation in the SMHCP, if adopted, will be the preferred mitigation method. Purchase of mitigation credits at an agency-approved mitigation bank (i.e., approved by the agency with jurisdiction over the affected species or habitat) in Solano County, will also be acceptable for compensatory mitigation. If participating in the SMHCP, performance standards identified in the SMHCP for the affected species and habitat will apply. If not participating in the SMHCP the performance standards will be based on established guidelines and the best available science and result in no net loss of special-status species or sensitive habitat in the County. If the project would result in take of state or federally listed species, then the City will require project proponent/s to obtain take authorization from the U.S Fish & Wildlife Service (USFWS) or the California Department of Fish and Wildlife (CDFW), as appropriate, depending on species status, and comply with all conditions of the take authorization. The City will require project applicants to develop a mitigation and monitoring plan to compensate for the loss of special-status species and sensitive habitats. The mitigation and monitoring plan will describe in detail how loss of special-status species or sensitive habitats shall be avoided or offset, including details on restoration and creation of habitat, compensation for the temporal loss of habitat, success criteria ensuring habitat function goals and objectives are met and that target special-status plant species are established, performance standards to ensure success, and remedial actions if performance standards are not met. The plan will include detailed information on the habitats present within the preservation and mitigation areas, the long-term management and monitoring of these habitats, legal protection for the preservation and mitigation areas (e.g., conservation easement, declaration of restrictions), and funding mechanism information (e.g., endowment).
- ▶ **Program OSC-1.4: Habitat Conservation Areas.** The City will require that compensatory mitigation for unavoidable impacts to special-status plant and wildlife habitat be completed through preservation and

restoration of in-kind habitat within the City's Sphere of Influence, where appropriate and feasible. The City will work proactively to identify large contiguous blocks of habitat to serve as habitat conservation areas that can be used for mitigation. High priority will be given to preserving and restoring habitats adjacent to the Suisun Marsh Management Areas and within the Travis Safety Easement. If sufficient in-kind habitat is not available within the City's Sphere of Influence, compensatory mitigation will be required within Solano County as near as possible to the City's Sphere of Influence. Habitat conservation areas will be subject to a permanent covenant, such as a conservation easement or fee title, and shall include an ongoing maintenance agreement with a third-party, nonprofit conservation organization (Conservation Operator), with the City and CDFW named as third-party beneficiaries. The Conservation Operator shall be a qualified conservation easement land manager, such as a land trust or other qualified organization, that manages land as its primary function. Additionally, the Conservation Operator shall be a tax-exempt nonprofit conservation organization that meets the criteria of Civil Code Section 815.3(a) and shall be selected or approved by the City, after consultation with CDFW or USFWS, as appropriate depending on status of the species for which the Habitat Conservation Area is being established. The City, after consultation with the appropriate agency and the Conservation Operator, shall approve the content and form of the conservation easement. The City, CDFW and/or USFWS (depending on species status), and the Conservation Operator shall each have the power to enforce the terms of the conservation easement. The Conservation Operator shall monitor the easement in perpetuity to ensure compliance with the terms of the easement. The City shall establish an endowment or some other financial mechanism that is sufficient to fund in perpetuity the operation, maintenance, management, and enforcement of the conservation easement. If an endowment is used, either the endowment funds shall be submitted to the City to be distributed to an appropriate third-party nonprofit conservation agency, or they shall be submitted directly to the third-party nonprofit conservation agency in exchange for an agreement to manage and maintain the lands in perpetuity. The Conservation Operator shall not sell, lease, or transfer any interest of any conservation easement or mitigation land it acquires without prior written approval of the City and CDFW/USFWS (depending on species status). The City Planning Department shall ensure that mitigation habitat established for impacts on habitat within the City's Planning Area is properly established and is functioning as habitat by conducting regular monitoring of the mitigation site(s) for the first 10 years after establishment of the easement.

- ▶ **Policy OSC-2.1:** The City will coordinate environmental review and mitigation requirements with the SMHCP.
- ▶ **Policy OSC-2.2:** The City will support the use of mitigation fees from the SMHCP to fund preservation and restoration elements of the City's conservation and open space strategy.
- ▶ **Policy OSC-2.3:** The City will require that new developments comply with relevant conservation measures detailed within the Conservation Strategy chapter of the SMHCP, as applicable.
- ▶ **Program OSC-2.1: Conservation Planning.** The City, in collaboration with other participating agencies, will participate in development, adoption, and implementation of the SMHCP. Mitigation and conservation measures from the SMHCP will be incorporated into the City's monitoring and implementation of the General Plan, as appropriate.
- ▶ **Policy OSC-3.1:** The City will support efforts to preserve lands within the Primary Management Area of the Suisun Marsh Protection Plan as open space for appropriate agriculture, wildlife habitat, and limited outdoor recreation compatible with the objectives of the Suisun Marsh Protection Plan.

- ▶ **Policy OSC-3.2:** The City will encourage the development of a satellite campus with access to Suisun Marsh to provide the opportunity for specialized biological resources or climate change research in collaboration with educational institutions.
- ▶ **Policy OSC-3.3:** The City will coordinate with the Department of Water Resources, Delta Stewardship Council, and San Francisco Bay Conservation and Development Commission to ensure consistency with planning efforts of those agencies, including, but not limited to, the Bay Delta Conservation Plan, and Suisun Marsh Protection Plan.
- ▶ **Policy OSC-3.4:** New developments shall control debris, sediment, and the rate and dispersal of runoff before drainage into watercourses and Suisun Marsh through the incorporation of erosion control measures.
- ▶ **Policy OSC-3.5:** New developments adjacent to watercourses, Suisun Slough, and Suisun Marsh shall include buffer areas, as needed, to avoid flood hazards, protect water quality, and preserve habitat for wildlife.
- ▶ **Policy OSC-3.6:** The City will implement relevant policies of the Suisun Marsh Protection Plan to aid in protecting and restoring tidal marsh lands.

## Conclusion

Successful implementation of the policies and programs of the 2035 General Plan would avoid, minimize, or compensate for potential impacts on special-status wildlife and their habitat because it would require new developments to identify and avoid special-status wildlife and their habitats to the extent feasible and to mitigate unavoidable impacts in coordination with the appropriate state or federal agency charged with the protection of the subject species, including take authorization where applicable, and compliance with all conditions of the take authorization. The 2035 General Plan programs and policies require new projects to mitigate unavoidable impacts on special-status wildlife species covered in the SMHCP in consistency with the provisions of the SMHCP Conservation Strategy. The Conservation Strategy of the draft SMHCP includes performance standards and design guidelines, as well as compensatory mitigation requirements, to ensure that covered species habitat is avoided to the extent feasible, that the majority of high value habitat for covered species is preserved in perpetuity, and that habitat removed as a result of new developments is replaced at sufficient ratios to fully offset losses. Special-status wildlife species covered under the SMHCP that could be affected by implementation of the 2035 General Plan are Conservancy fairy shrimp, vernal pool fairy shrimp, vernal pool tadpole shrimp, California tiger salamander, Swainson's hawk, California black rail, California clapper rail, burrowing owl, Suisun song sparrow, tricolored blackbird, Delta smelt, Sacramento splittail, longfin smelt, and salt marsh harvest mouse. Specific mitigation requirements, including compensatory mitigation ratios, in the current draft SMHCP Conservation Strategy (SCWA 2012: Chapter 5) are provided in Appendix D.

Successful implementation of the General Plan programs and policies would avoid and minimize indirect impacts on special-status wildlife by maintaining habitat connectivity, preserving wildlife movement corridors, preserving fish and wildlife habitats along Suisun Slough and tributary watercourses, preserving waterways, riparian corridors, and stands of mature trees, providing buffers around wetland and riparian habitats, and requiring measures to protect water quality and prevent runoff, sediment, and erosion into waterways.

Although development under the General Plan would result in loss of suitable and occupied habitat for special-status wildlife, the 2035 General Plan land use design would ensure the majority of potential habitat would remain

in open space land uses for conservation of natural resources. Furthermore, General Plan programs and policies ensure that preservation and restoration of in-kind habitats within the City's Sphere of Influence be used to compensate for unavoidable habitat losses. Habitat preservation and restoration would be prioritized in areas adjacent to Suisun Marsh and in the Travis Safety Easement to provide large, contiguous blocks of habitat, thereby minimizing the indirect effects of habitat fragmentation and edge effects. With implementation of the above mentioned policies and programs, along with policy diagrams in the 2035 General Plan, the impact on special-status wildlife is considered **less than significant**.

### **Potential Impact of the Mitigation Attracting Hazardous Wildlife to the Travis Air Force Base Flight Path**

Wetland habitat creation or restoration in the Travis Safety Easement, or other areas within 10,000 feet of the base, could raise concerns about attracting waterfowl that would result in a potential safety hazard for aircraft flights at Travis Air Force Base from high-speed collisions with birds or the ingestion of birds into aircraft engines. Damage or potential damage caused by birds and other wildlife is termed a "strike" or "strike hazard." Use of the area surrounding Travis Air Force Base by wildlife considered hazardous to aircraft is not expected to increase as a result of implementing the programs and policies of the 2035 General Plan because the types of wetlands created or restored within the safety easement would be restricted to vernal pool wetlands, which would not provide a perennial water source for waterfowl and would not contain emergent vegetation that would provide escape cover, nesting, or roosting opportunities for hazardous wildlife. These ephemeral wetlands would not be expected to attract large numbers of waterfowl to the areas around Travis Air Force Base, especially when there is abundant habitat available in the surrounding area that is much more attractive to waterfowl, such as Suisun Marsh and other perennial wetlands with emergent vegetation for cover and nesting. Habitat creation and restoration in the General Plan designated conservation areas is intended to compensate for wetland habitats that would be removed as a result of land use changes approved through implementation of the 2035 General Plan and would be designed to provide the same habitat functions as the wetlands they replace. Wetland mitigation plans would include success criteria to ensure that compensatory wetlands are functioning as vernal pools and do not develop into perennial wetlands that are attractive to waterfowl and could pose a strike hazard to aircraft. Likewise, upland wildlife habitat mitigation would be designed specifically to replace the lost habitat functions of existing upland habitats removed as a result of land use changes approved under the 2035 General Plan. Upland habitat mitigation in the vicinity of Travis Air Force Base would consist of preserving existing valley floor grassland habitat. Therefore, habitat mitigation within the planning area would not result in a change in the types of habitat present in the vicinity of Travis Air Force Base and would not make the area more attractive to hazardous wildlife.

### **Mitigation Measure**

No mitigation is necessary.

**IMPACT 3.3-3** **Loss and Degradation of Riparian Habitats or other Sensitive Natural Communities.** *Implementing the 2035 General Plan would result in conversion of undeveloped land that currently supports a limited amount of riparian habitat. (All other sensitive natural communities, including marsh and vernal pool habitats found in the planning area are addressed under impacts on federally protected wetlands and impacts on special-status species and are not discussed here.) Therefore, buildout of the 2035 General Plan could result in loss and degradation of riparian habitat. This impact would be **potentially significant**.*

Changes in land use designations that would occur with implementation of the 2035 General Plan would allow development in areas that contain waterways, both natural and manmade, that support riparian habitat. Development in these areas could result in removal of riparian vegetation or habitat degradation from pollutants transported by urban runoff, changes in vegetation as a result of changes in land use and management practices, and altered site hydrology from the construction of adjacent urban development and roadways or alteration of stream channels. Additional indirect impacts on riparian habitats could result from habitat fragmentation, introduction of invasive species or noxious weeds, vegetation management practices (e.g., clearing for fire control), and intrusion by humans and domestic animals that could disturb riparian vegetation and reduce habitat values.

Potential impacts on riparian habitats are reduced through implementation of the City's Land Use and Open Space Diagrams, which were developed, in part, to avoid development in and along waterways. However, development could proceed in some areas that contain waterways with associated riparian vegetation resulting in loss of riparian habitat. This impact would be **potentially significant**.

### **Relevant Policies and Programs of the 2035 General Plan**

- ▶ **Policy OSC-1.2:** New developments in areas with environmentally significant features, such as waterways, riparian habitats, and stands of mature trees shall preserve and incorporate those features into project planning and design, to the greatest extent feasible.
- ▶ **Policy OSC-1.3:** The City will protect and preserve natural watercourses and drainage channels, particularly along open space areas.
- ▶ **Policy OSC-1.4:** New development shall preserve and incorporate into site planning natural drainages that could support riparian habitat to the greatest extent feasible.
- ▶ **Policy OSC-1.7:** The City will preserve fish and wildlife habitats along Suisun Slough and tributary watercourses.
- ▶ **Policy OSC-1.8:** Roads, water lines, sewer lines, drainage facilities, and other public facilities constructed to serve development shall be located and designed to avoid substantial impacts to stream courses, associated riparian areas, and wetlands, to the greatest practical extent ~~feasible~~.
- ▶ **Program OSC-1.1: Preservation through Site Planning and Design.** The City will maintain data on biological resources and natural habitats. The City will require a review of biological resource information for new developments that could adversely affect potentially significant biological resources. The types and significance of biological resources present will be reviewed as part of the development entitlement process. As part of this review, the City will determine whether preservation of resources is feasible within the context

of the project site planning and design process. The City will work proactively with applicants to identify opportunities to preserve important biological resources through planning and design approaches. Where feasible, the City will require preservation of biological resources within site planning and design as a condition of project approval.

- ▶ **Program OSC-1.2: Wetlands and Riparian Buffers.** Through review of proposed private and public projects near wetlands and riparian areas, the City will require buffering to protect these important habitats. Setbacks will be included as a part of conditions of approval for proposed projects. The depth of the setback shall be determined based upon site-specific conditions, habitat requirements of species that may use the setbacks, and communication with appropriate trustee and responsible agencies, such as the California Department of Fish & Wildlife, the U.S. Army Corps of Engineers, and the U.S. Fish and Wildlife Service. Depending on the vegetation type, ongoing management of buffers may be necessary to address invasive species, human disturbance, and to sustain habitat and water quality functions. Buffers should be subject to a permanent covenant, such as a conservation easement, and shall include an ongoing maintenance agreement with a land trust, such as the Solano Land Trust, or other qualified nonprofit conservation organization. Low-impact recreation could be allowed in buffer areas so long as impacts to these sensitive habitats are avoided or fully mitigated using design features to avoid indirect impacts, fencing and/or signage to exclude public access in environmentally sensitive areas, siting recreational amenities away from sensitive habitats at the outside edge of the buffer, and implementing best management practices. Human and pet disturbance in sensitive habitat areas should be discouraged as a part of buffer and project design.
- ▶ **Program OSC-1.3: Biological Review for New Developments.** The City will require a biological review and analysis for new developments that could adversely affect potential special-status species habitat. If, after examining all feasible means to avoid impacts to potential special-status species habitat through project site planning and design, adverse effects cannot be avoided, then impacts shall be mitigated in accordance with guidance from the appropriate state or federal agency charged with the protection of the subject species, including surveys conducted according to applicable standards and protocols, where necessary, implementation of impact minimization measures based on accepted standards and guidelines and best available science, and compensatory mitigation for unavoidable loss of sensitive and special-status species habitats through preservation and enhancement of existing populations, creation of new populations through seed collection or transplantation, and/or restoring or creating suitable replacement habitat in sufficient quantities to offset the loss of sensitive or occupied habitat and individuals. Participation in the SMHCP, if adopted, will be the preferred mitigation method. Purchase of mitigation credits at an agency-approved mitigation bank (i.e., approved by the agency with jurisdiction over the affected species or habitat) in Solano County, will also be acceptable for compensatory mitigation. If participating in the SMHCP, performance standards identified in the SMHCP for the affected species and habitat will apply. If not participating in the SMHCP the performance standards will be based on established guidelines and the best available science and result in no net loss of special-status species or sensitive habitat in the County. If the project would result in take of state or federally listed species, then the City will require the project proponents to obtain take authorization from the U.S. Fish & Wildlife Service (USFWS) or the California Department of Fish and Wildlife (CDFW), as appropriate depending on species status, and comply with all conditions of the take authorization. The City will require project applicants to develop a mitigation and monitoring plan to compensate for the loss of special-status species and sensitive habitats. The mitigation and monitoring plan will describe in detail how loss of special-status species or sensitive habitats shall be avoided or offset, including details on restoration and creation of habitat, compensation for the temporal loss of habitat, success

criteria ensuring habitat function goals and objectives are met and that target special-status plant species are established, performance standards to ensure success, and remedial actions if performance standards are not met. The plan will include detailed information on the habitats present within the preservation and mitigation areas, the long-term management and monitoring of these habitats, legal protection for the preservation and mitigation areas (e.g., conservation easement, declaration of restrictions), and funding mechanism information (e.g., endowment).

- ▶ **Policy OSC-3.4:** New developments shall control debris, sediment, and the rate and dispersal of runoff before drainage into watercourses and Suisun Marsh through the incorporation of erosion control measures.
- ▶ **Policy OSC-3.5:** New developments adjacent to watercourses, Suisun Slough, and Suisun Marsh shall include buffer areas, as needed, to avoid flood hazards, protect water quality, and preserve habitat for wildlife.
- ▶ **Program OSC-1.5: Riparian Habitat Management Plan.** If complete avoidance of waterways and riparian habitat is not feasible and projects require encroachment into the riparian habitat, project applicants shall be required to develop a riparian habitat mitigation plan resulting in no net loss of riparian habitat functions and values. The mitigation plan shall include the following: methods to be implemented to avoid and/or compensate for impacts on waterways and riparian habitat; identification of mitigation sites and criteria for selecting these sites and site-specific management procedures to benefit establishment and maintenance of native riparian plant species; a planting and irrigation program, if needed, for establishment of native riparian trees and shrubs at strategic locations within each mitigation site (planting and irrigation may not be necessary if preservation of functioning riparian habitat is chosen as mitigation or if restoration can be accomplished without irrigation or planting); in kind reference habitats for comparison with compensatory riparian habitats (using performance and success criteria) to document success; monitoring protocol, including schedule and annual report requirements (compensatory riparian habitats shall be monitored for a minimum period of five years); ecological performance standards, based on the best available science and including specifications for native riparian plant densities, species composition, amount of dead woody vegetation gaps and bare ground, and survivorship; at a minimum, compensatory mitigation planting sites must achieve 80% survival of planted riparian trees and shrubs by the end of the five-year maintenance and monitoring period or dead and dying trees shall be replaced and monitoring continued until 80% survivorship is achieved; corrective measures if performance standards are not met; responsible parties for monitoring and preparing reports; and responsible parties for receiving and reviewing reports and for verifying success or prescribing implementation or corrective actions. Mitigation may be accomplished through replacement, enhancement of degraded habitat, or off -site mitigation at an established mitigation bank. If a proposed project requires work on the bed and bank of a stream or other water body, the project applicant shall also obtain a streambed alteration agreement under Section 1602 of the California Fish and Game Code from CDFW prior to project implementation, and shall implement all requirements of the agreement in the timeframes required therein.

## Conclusion

Successful implementation of the General Plan policies and programs listed above is expected to reduce potentially significant impacts on riparian habitat to a less-than-significant level by requiring delineation and avoidance of these habitats to the maximum extent feasible, establishment of riparian habitat buffers, and by providing compensation for unavoidable impacts in a manner that would ensure no net loss of overall riparian habitat functions. With the implementation of the above mentioned policies and programs, along with policy diagrams in the 2035 General Plan, the impact is considered **less than significant**.

## Mitigation Measure

No mitigation is necessary.

**IMPACT 3.3-4** **Loss and Degradation of Federally Protected Wetlands** *Implementing the 2035 General Plan would result in conversion of undeveloped land that currently supports wetlands and other waters protected under Section 404 of the CWA. Therefore, buildout of the 2035 General Plan could result in loss and degradation of federally protected wetlands. This impact would be **potentially significant**.*

Implementing the 2035 General Plan would accommodate land conversion in areas that currently support wetlands and other waters, including saline and freshwater emergent wetlands (i.e., marsh), vernal pools and other seasonal wetlands, creeks, and sloughs. Impacts on wetlands and other waters could occur through habitat conversion, encroachment, routine maintenance, or other activities in the immediate vicinity of waterways and in habitat supporting wetlands. Land conversion could result in direct fill of wetlands and other waters. Indirect impacts could result from adjacent development that leads to habitat modifications such as changes in hydrology and reduction in water quality caused by urban runoff, erosion, and siltation. It is likely that most wetlands and other waters in the planning area would qualify as waters of the United States due to hydrological connectivity to navigable waters (e.g., Suisun Slough) or adjacency to other water of the United States; however, some wetlands may be disclaimed by the USACE as isolated waters. Any wetlands or other waters disclaimed by the USACE would still be subject to regulation by the San Francisco Bay RWQCB as waters of the state and impacts to waters of the state would require mitigation. The 2035 General Plan land use design would retain most of the existing waterways within designated open space areas; however, the undeveloped lands within the City's sphere of influence currently support grasslands with high density of vernal pools, as well as marsh wetlands, and any development in these areas would undoubtedly result in fill of federally protected wetlands as well as potential indirect impacts to wetlands retained within developed areas. This impact would be **potentially significant**.

## Relevant Policies and Programs of the 2035 General Plan

- ▶ **Policy OSC-1.3:** The City will protect and preserve natural watercourses and drainage channels, particularly along open space areas.
- ▶ **Policy OSC-1.4:** New development shall preserve and incorporate into site planning natural drainages that could support riparian habitat to the greatest extent feasible.
- ▶ **Policy OSC-1.7:** The City will preserve fish and wildlife habitats along Suisun Slough and tributary watercourses.
- ▶ **Policy OSC-1.8:** Roads, water lines, sewer lines, drainage facilities, and other public facilities constructed to serve development shall be located and designed to avoid substantial impacts to stream courses, associated riparian areas, and wetlands, to the greatest practical extent ~~feasible~~.
- ▶ **Program OSC-1.1: Preservation through Site Planning and Design.** The City will maintain data on biological resources and natural habitats. The City will require a review of biological resource information for new developments that could adversely affect potentially significant biological resources. The types and significance of biological resources present will be reviewed as part of the development entitlement process. As part of this review, the City will determine whether preservation of resources is feasible within the context

of the project site planning and design process. The City will work proactively with applicants to identify opportunities to preserve important biological resources through planning and design approaches. Where feasible, the City will require preservation of biological resources within site planning and design as a condition of project approval.

- ▶ **Program OSC-1.2: Wetlands and Riparian Buffers.** Through review of proposed private and public projects near wetlands and riparian areas, the City will require buffering to protect these important habitats. Setbacks will be included as a part of conditions of approval for proposed projects. The depth of the setback shall be determined based upon site-specific conditions, habitat requirements of species that may use the setbacks, and communication with appropriate trustee and responsible agencies, such as the California Department of Fish & Game, the U.S. Army Corps of Engineers, and the U.S. Fish and Wildlife Service. Depending on the vegetation type, ongoing management of buffers may be necessary to address invasive species, human disturbance, and to sustain habitat and water quality functions. Buffers should be subject to a permanent covenant, such as a conservation easement, and shall include an ongoing maintenance agreement with a land trust, such as the Solano Land Trust, or other qualified nonprofit conservation organization. Low-impact recreation could be allowed in buffer areas so long as impacts to these sensitive habitats are avoided or fully mitigated using design features to avoid indirect impacts, fencing and/or signage to exclude public access in environmentally sensitive areas, siting recreational amenities away from sensitive habitats at the outside edge of the buffer, and implementing best management practices. Human and pet disturbance in sensitive habitat areas should be discouraged as a part of buffer and project design.
- ▶ **Program OSC-1.3: Biological Review for New Developments.** The City will require a biological review and analysis for new developments that could adversely affect potential special-status species habitat. If, after examining all feasible means to avoid impacts to potential special-status species habitat through project site planning and design, adverse effects cannot be avoided, then impacts shall be mitigated in accordance with guidance from the appropriate state or federal agency charged with the protection of the subject species, including surveys conducted according to applicable standards and protocols, where necessary, implementation of impact minimization measures based on accepted standards and guidelines and best available science, and compensatory mitigation for unavoidable loss of sensitive and special-status species habitats through preservation and enhancement of existing populations, creation of new populations through seed collection or transplantation, and/or restoring or creating suitable replacement habitat in sufficient quantities to offset the loss of sensitive or occupied habitat and individuals. Participation in the SMHCP, if adopted, will be the preferred mitigation method. Purchase of mitigation credits at an agency-approved mitigation bank (i.e., approved by the agency with jurisdiction over the affected species or habitat) in Solano County, will also be acceptable for compensatory mitigation. If participating in the SMHCP, performance standards identified in the SMHCP for the affected species and habitat will apply. If not participating in the SMHCP, the performance standards will be based on established guidelines and the best available science and result in no net loss of special-status species or sensitive habitat in the County. If the project would result in take of state or federally listed species, then the City will require the project proponent/s to obtain take authorization from the U.S. Fish & Wildlife Service (USFWS) or the California Department of Fish and Wildlife (CDFW), as appropriate, depending on species status, and comply with all conditions of the take authorization. The City will require project applicants to develop a mitigation and monitoring plan to compensate for the loss of special-status species and sensitive habitats. The mitigation and monitoring plan will describe in detail how loss of special-status species or sensitive habitats shall be avoided or offset, including details on restoration and creation of habitat, compensation for the temporal loss of habitat, success

criteria ensuring habitat function goals and objectives are met and that target special-status plant species are established, performance standards to ensure success, and remedial actions if performance standards are not met. The plan will include detailed information on the habitats present within the preservation and mitigation areas, the long-term management and monitoring of these habitats, legal protection for the preservation and mitigation areas (e.g., conservation easement, declaration of restrictions), and funding mechanism information (e.g., endowment).

- ▶ **Program OSC-1.4: Habitat Conservation Areas.** The City will require that compensatory mitigation for unavoidable impacts to special-status plant and wildlife habitat be completed through preservation and restoration of in-kind habitat within the City's Sphere of Influence, where appropriate and feasible. The City will work proactively to identify large contiguous blocks of habitat to serve as habitat conservation areas that can be used for mitigation. High priority will be given to preserving and restoring habitats adjacent to the Suisun Marsh Management Areas and within the Travis Safety Easement. If sufficient in-kind habitat is not available within the City's Sphere of Influence, compensatory mitigation will be required within Solano County as near as possible to the City's Sphere of Influence. Habitat conservation areas will be subject to a permanent covenant, such as a conservation easement or fee title, and shall include an ongoing maintenance agreement with a third-party, nonprofit conservation organization (Conservation Operator), with the City and DFG named as third-party beneficiaries. The Conservation Operator shall be a qualified conservation easement land manager, such as a land trust or other qualified organization that manages land as its primary function. Additionally, the Conservation Operator shall be a tax-exempt nonprofit conservation organization that meets the criteria of Civil Code Section 815.3(a) and shall be selected or approved by the City, after consultation with CDFW or USFWS, as appropriate depending on status of the species for which the Habitat Conservation Area is being established. The City, after consultation with the appropriate agency and the Conservation Operator, shall approve the content and form of the conservation easement. The City, CDFW and/or USFWS (depending on species status), and the Conservation Operator shall each have the power to enforce the terms of the conservation easement. The Conservation Operator shall monitor the easement in perpetuity to ensure compliance with the terms of the easement. The City shall establish an endowment or some other financial mechanism that is sufficient to fund in perpetuity the operation, maintenance, management, and enforcement of the conservation easement. If an endowment is used, either the endowment funds shall be submitted to the City to be distributed to an appropriate third-party nonprofit conservation agency, or they shall be submitted directly to the third-party nonprofit conservation agency in exchange for an agreement to manage and maintain the lands in perpetuity. The Conservation Operator shall not sell, lease, or transfer any interest of any conservation easement or mitigation land it acquires without prior written approval of the City and CDFW/USFWS (depending on species status). The City Planning Department shall ensure that mitigation habitat established for impacts on habitat within the City's Planning Area is properly established and is functioning as habitat by conducting regular monitoring of the mitigation site(s) for the first 10 years after establishment of the easement.
- ▶ **Policy OSC-2.1:** The City will coordinate environmental review and mitigation requirements with the SMHCP.
- ▶ **Policy OSC-2.2:** The City will support the use of mitigation fees from the SMHCP to fund preservation and restoration elements of the City's conservation and open space strategy.

- ▶ **Policy OSC-2.3:** The City will require that new developments comply with relevant conservation measures detailed within the Conservation Strategy chapter of the SMHCP, as applicable.
- ▶ **Program OSC-2.1: Conservation Planning.** The City, in collaboration with other participating agencies, will participate in development, adoption, and implementation of the SMHCP. Mitigation and conservation measures from the SMHCP will be incorporated into the City's monitoring and implementation of the General Plan, as appropriate.
- ▶ **Policy OSC-3.1:** The City will support efforts to preserve lands within the Primary Management Area of the Suisun Marsh Protection Plan as open space for appropriate agriculture, wildlife habitat, and limited outdoor recreation compatible with the objectives of the Suisun Marsh Protection Plan.
- ▶ **Policy OSC-3.3:** The City will coordinate with the Department of Water Resources, Delta Stewardship Council, and San Francisco Bay Conservation and Development Commission to ensure consistency with planning efforts of those agencies, including, but not limited to, the Bay Delta Conservation Plan, Delta Plan, and Suisun Marsh Protection Plan.
- ▶ **Policy OSC-3.4:** New developments shall control debris, sediment, and the rate and dispersal of runoff before drainage into watercourses and Suisun Marsh through the incorporation of erosion control measures.
- ▶ **Policy OSC-3.5:** New developments adjacent to watercourses, Suisun Slough, and Suisun Marsh shall include buffer areas, as needed, to avoid flood hazards, protect water quality, and preserve habitat for wildlife.
- ▶ **Policy OSC-3.6:** The City will implement relevant policies of the Suisun Marsh Protection Plan to aid in protecting and restoring tidal marsh lands.
- ▶ **Program OSC-1.6: Wetlands Delineation and Permit Requirements.** The City shall require all projects that would result in ground-disturbing activities on sites containing aquatic habitats, as a condition of project approval, conduct a delineation of waters of the United States according to methods established in the USACE wetlands delineation manual (Environmental Laboratories 1987) and Arid West Supplement (Environmental Laboratories 2008). The delineation shall map and quantify the acreage of all aquatic habitats on the project site and shall be submitted to USACE for verification. Such delineation shall be completed as part of an application for a project. A permit from the USACE will be required for any activity resulting in fill of wetlands and other waters of the United States. If the project impact acreage is below one half acre, the project may qualify for a Nationwide Permit. If fill impacts exceed one half acre, a letter of permission or individual permit from the USACE will be required. Project applicants shall be required to obtain this permit prior to project initiation. A wetland mitigation plan that satisfies USACE requirements will be needed as part of the permit application. Project applicants that obtain a Section 404 permit will also be required to obtain water quality certification from the San Francisco Bay RWQCB pursuant to Section 401 of the CWA. If the project involves work in areas containing waters disclaimed by the USACE, project applicants shall obtain a Waste Discharge Requirement permit from the San Francisco Bay RWQCB pursuant to the Porter Cologne Act. If the project involves work on the bed and bank of a stream or other water body, a Streambed Alteration Agreement from CDFW pursuant to Section 1602 of the Fish and Game Code will also be needed. Project applicants shall be required to obtain all needed permits prior to project implementation, to abide by the conditions of the permits, including all mitigation requirements, and to implement all requirements of the permits in the timeframes required therein.

## Conclusion

Successful implementation of the General Plan policies and programs listed above is expected to reduce significant impacts on wetlands and other waters of the United States, and waters of the state, to a less-than-significant level by requiring delineation and avoidance of these habitats to the maximum extent feasible, establishment of wetland habitat buffers, and by providing compensation for unavoidable impacts in a manner that would ensure no net loss of overall wetland habitat functions and values, in accordance with USACE and San Francisco Bay RWQCB standards. With the implementation of the above mentioned policies and programs, along with policy diagrams in the 2035 General Plan, the impact is considered **less than significant**.

## Potential Impact of the Mitigation Attracting Hazardous Wildlife to the Travis Air Force Base Flight Path

Please see the discussion under Impact 3.3-2, Loss and Degradation of Habitat for Special-status Wildlife Species and Potential Direct Take of Individuals.

### Mitigation Measure

No mitigation is necessary.

**IMPACT 3.3-5**     **Interference with Wildlife Movement Corridors** *Implementing the 2035 General Plan would accommodate development within and adjacent to the Jepson Prairie-Suisun Marsh Corridor. Therefore, buildout of the 2035 General Plan could result in interference with a key wildlife movement corridor. This impact is considered potentially significant.*

The Jepson Prairie-Suisun Marsh corridor running through and adjacent to study area 17 provides an important regional habitat link between the Suisun Marsh and Jepson Prairie facilitating local daily and seasonal movement (particularly by species with large home ranges) and maintaining genetic connectivity among populations threatened with isolation. As stated in the SMHCP, this corridor provides the only link from tidal marsh into valley floor and vernal pool grasslands in the region. The land use plan generally directs development away from the Jepson Prairie-Suisun Marsh Corridor; however, there is still the possibility under the 2035 General Plan that land use changes could be implemented in or adjacent to the movement corridor. Development in or adjacent to this movement corridor could reduce the value of the corridor by introducing predators (e.g., domestic pets), invasive species (e.g., impenetrable vegetation), and noise and light disturbance; constructing barriers that physically impede movement (e.g., fences, walls, buildings); fragmenting the corridor with structures or land cover that increase risk of mortality during movement (e.g., roads, trails, parking lots, landscaping); or increasing human interactions that interrupt or impede wildlife movement or result in death, capture, injury, or harassment of wildlife within the movement corridor. This impact would be **potentially significant**.

## Relevant Policies and Programs of the 2035 General Plan

Protect wildlife habitat and movement corridors through the preservation of open space:

- **Policy OSC-1.1:** The City will require biological resources investigations for proposed developments that could adversely affect potential wildlife movement corridors to determine the value and importance of such corridors to daily and/or seasonal movement and dispersal of local wildlife and identify measures to minimize and avoid adverse effects on wildlife movement.

- ▶ **Policy OSC-1.2:** New developments in areas with environmentally significant features, such as waterways, riparian habitats, and stands of mature trees shall preserve and incorporate those features into project planning and design, to the greatest extent feasible.
- ▶ **Policy OSC-1.3:** The City will protect and preserve natural watercourses and drainage channels, particularly along open space areas.
- ▶ **Policy OSC-1.5:** New developments shall avoid placing any temporary or permanent barriers within wildlife movement corridors, if they are determined to exist on-site.
- ▶ **Policy OSC-1.6:** New developments shall be designed to avoid fragmentation or disruption of the Jepson Prairie-Suisun Marsh corridor and the City will ensure that land use change in areas near this corridor does not interrupt natural wildlife movement or migration through this area.
- ▶ **Policy OSC-2.1:** The City will coordinate environmental review and mitigation requirements with the SMHCP.
- ▶ **Policy OSC-2.3:** The City will require that new developments comply with relevant conservation measures detailed within the Conservation Strategy chapter of the SMHCP, as applicable.

## Conclusion

Successful implementation of the policies and programs of the 2035 General Plan would avoid and minimize potential interference with wildlife movement corridors because it would require new developments to identify and evaluate movement corridors, avoid impacts to wildlife movement, and to preserve movement corridors through design and planning to the extent feasible. The policies require that land use changes in the vicinity of the Jepson Prairie-Suisun Marsh corridor are compatible with wildlife movement through the area. The programs and policies also require consistency with the SMHCP, which will provide that plan participants shall maintain corridors and limit incompatible uses in corridors that provide habitat connectivity. With the implementation of the above mentioned policies and programs, along with policy diagrams in the 2035 General Plan, the impact is considered **less than significant**.

## Mitigation Measure

No mitigation is necessary.

**IMPACT 3.3-6** **Conflict with an Adopted Habitat Conservation Plan or Local Plans Protecting Biological Resources.**  
*Implementing the 2035 General Plan could allow development that would conflict with the conservation goals of the SMHCP and other local plans protecting biological resources, such as the Suisun Marsh Protection Plan. This impact would be **potentially significant**.*

Although the SMHCP is not an adopted plan, it is anticipated that it will be adopted before buildout of the 2035 General Plan and since the City is a participant in the proposed SMHCP, goals, programs, and policies of the 2035 General Plan strives for consistency with the SMHCP. Nonetheless, because of the existing constraints in undeveloped areas of the City's Sphere of Influence, the potential for conflicts with the SMHCP and other local plans protecting biological resources still exist. For example, most of the undeveloped land within the City's

Sphere of Influence is identified as high value vernal pool conservation area, Contra Costa goldfields core population, and Swainson's hawk priority conservation areas in the SMHCP. Portions of these areas are also identified as Primary or Secondary Management Areas under the Suisun Marsh Protection Plan. Other undeveloped portions of the Sphere of Influence are in Safety Easements for Travis Air Force Base. Therefore, there is very little land available for City growth without conflict with the provisions of these plans. This impact would be **potentially significant**.

### **Relevant Policies and Programs of the 2035 General Plan**

- ▶ **Policy OSC-2.1:** The City will coordinate environmental review and mitigation requirements with the SMHCP.
- ▶ **Policy OSC-2.2:** The City will support the use of mitigation fees from the SMHCP to fund preservation and restoration elements of the City's conservation and open space strategy.
- ▶ **Policy OSC-2.3:** The City will require that new developments comply with relevant conservation measures detailed within the Conservation Strategy chapter of the SMHCP, as applicable.
- ▶ **Program OSC-2.1: Conservation Planning.** The City, in collaboration with other participating agencies, will participate in development, adoption, and implementation of the SMHCP. Mitigation and conservation measures from the SMHCP will be incorporated into the City's monitoring and implementation of the General Plan, as appropriate.
- ▶ **Policy OSC-3.1:** The City will support efforts to preserve lands within the Primary Management Area of the Suisun Marsh Protection Plan as open space for appropriate agriculture, wildlife habitat, and limited outdoor recreation compatible with the objectives of the Suisun Marsh Protection Plan.
- ▶ **Policy OSC-3.3:** The City will coordinate with the Department of Water Resources, Delta Stewardship Council, and San Francisco Bay Conservation and Development Commission to ensure consistency with planning efforts of those agencies, including, but not limited to, the Bay Delta Conservation Plan, Delta Plan, and Suisun Marsh Protection Plan.
- ▶ **Policy OSC-3.6:** The City will implement relevant policies of the Suisun Marsh Protection Plan to aid in protecting and restoring tidal marsh lands.

### **Conclusion**

Successful implementation of the policies and programs of the 2035 General Plan would avoid and minimize potential conflicts with the SMHCP, the Suisun Marsh protection Plan, and other local plans because they specifically require compliance and consistency with the SMHCP and coordination with the Suisun Marsh Protection Plan, Bay Delta Conservation Plan, Delta Plan, and agencies implementing local policies. With the implementation of the above mentioned policies and programs, along with policy diagrams in the 2035 General Plan, the impact is considered **less than significant**.

### **Mitigation Measure**

No mitigation is necessary.

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# 3.4 CULTURAL RESOURCES

## METHODOLOGY

Research and field methods employed for the cultural resources analysis included a records search of the Northwest Information Center (NWIC) of the California Historical Resource Information System, archival and background research, and Native American consultation. To comply with Senate-Bill 18, AECOM initiated contact with the Native American Heritage Commission on August 19, 2010 on behalf of the City of Suisun City. A list of local Native American individuals / tribes was requested, in addition to a search of their Sacred Lands File. This consultation process is currently ongoing. AECOM contacted the Solano County Historical Society by phone on August 23, 2010 in order to obtain additional information concerning the history of the area. No new information was provided.

## IMPACT ANALYSIS

|        |   |
|--------|---|
| IMPACT | Potential Impacts to Historic Resources of Suisun City. <i>Land use change accommodated under the 2035 General Plan could result in changes that could affect historic structures, historic districts, and the historic character of Suisun City when new development would require demolition of historically significant building or structures. This impact is <b>potentially significant</b>.</i> |
| 3.4-1  |   |

The City established the Register of Suisun City Historic Properties and all structures and sites identified in its 1976 survey and inventory prepared by the Solano County Landmarks Commission. Table CUL-1 in the Cultural Resources Background Report lists the known historic resources in the City and its sphere of influence. A total of 16 individually significant or potentially significant cultural resources and one historic district with 95 contributing resources have been identified within the City limits and the sphere of influence. These resources are buildings dating to the late-19th and early 20th century, and include such resources as a railroad depot, residences, commercial, fraternal, and religious buildings. Of the 16 individually significant buildings, two are listed on the NRHP and the other 14 were determined eligible for listing in the National Register of Historic Places (NRHP). The historic district and its contributing resources were also determined eligible for the NRHP.

## Relevant Policies and Programs of the 2035 General Plan

- **Policy OSC-6.1:** Buildings and other resources that have historical or architectural value should be preserved, wherever feasible.
- **Policy OSC-6.2:** Infill development in the Downtown Waterfront District shall be designed so that building placement and massing, shape, design, color, and detail are architecturally compatible with surrounding historic buildings.
- **Policy OSC-6.3:** Infill development in the Downtown Waterfront District shall be designed to preserve the overall pedestrian-scaled environment, including building configuration, setting, and orientation.
- **Policy OSC-6.4:** The City will encourage private property owners to preserve and maintain historic structures in the Downtown Waterfront District, consistent with applicable Department of the Interior historic preservation standards.

- ▶ **Policy OSC-6.5:** The City will encourage adaptive reuse of historic structures where as much of the historic character as possible is preserved.
- ▶ **Policy OSC-6.6:** New developments should be designed to retain as many key character-defining features as possible in the restoration or renovation of historic buildings.
- ▶ **Policy OSC-6.7:** Wherever possible, new developments involving historic structures should maintain or restore original building proportions, dimensions, and elements.
- ▶ **Policy OSC-6.8:** The City will provide information to property owners regarding tax incentives and other federal and state programs, including the State Historical Building Code, to encourage the preservation and rehabilitation of historic structures.
- ▶ **Program OSC-6.1: Historic Resource Inventory.** The City will maintain an inventory of historic and potentially-historic structures and resources in the Downtown Waterfront Specific Plan Area. The inventory will include the date of construction; information regarding the architectural style and significance; information regarding significant historical figures or events that had occurred at or near the resource; and additional background about why the resource should be preserved.
- ▶ **Program OSC-6.2: Documentation of Historic Resources.** In cases where the preservation of a historic resource is not feasible, the City will require that the resource be documented and the information regarding the resource be retained in a secure, but publicly accessible location. The resource proposed for removal should be described and incorporated into historic and/or interpretive signage. The reuse and display of historic materials and artifacts from the resource is encouraged.
- ▶ **Program OSC-6.3: Historic Rehabilitation Projects.** The City will proactively research opportunities for funding that can be used to provide financial support for historic rehabilitation projects, particularly in the Downtown Waterfront District. The City will prioritize and give special emphasis to the potential for rehabilitation projects involving structures that are grouped in close proximity, particularly rural, agricultural, settlement-related structures, and structures associated with the railroad.

## Conclusion

The City has developed policies and programs in the 2035 General Plan to help preserve and enhance Suisun City's Historic Downtown by maintaining an inventory of historic and potentially-historic structures and resources in the Downtown Waterfront Specific Plan Area; encouraging preservation of buildings, building features, and other elements that have historical or architectural value; encouraging design and placement of development to be compatible with adjacent historical buildings and features; exploring tax and financial programs to encourage preservation of historical resources; and requiring documentation of historical resources when preservation is not feasible. While these policies and programs would encourage and enhance preservation of significant historical resources, it is possible that new development could require demolition of historically significant resources. While documentation of resources prior to demolition would reduce the magnitude of the impact, the loss of the historical resource would result in a **significant** impact.

## Mitigation Measure

The policies and programs of the 2035 General Plan and compliance with other relevant requirements represent all feasible mitigation. The impact is considered **significant and unavoidable**.

**IMPACT** Destruction or Damage to Archaeological Resources, Paleontological Resources, or Human Remains.

**3.4-2** *Land use change contemplated under the 2035 General Plan would involve grading, excavation, and potentially other ground-disturbing activities that could disturb or damage any previously unidentified archaeological resources or human remains. This impact is **potentially significant**.*

The NWIC records search did not indicate any known archaeological resources or sites within the City's Planning Area that are listed or eligible for listing on the NRHP or CRHR. General observations about archaeological sensitivity, i.e., the possible occurrence of archaeological deposits, can be made based on the characteristics and distribution of known cultural resources. Areas in which prehistoric archaeological sites are likely to be present within the Planning Area include, but are not limited to, areas adjacent or near to year-round or seasonal water courses. Areas in which historic archaeological resources are likely present include, but are not limited to, areas with large, old eucalyptus trees or any other stand or grouping of non-native trees that appear old (such as orchards); near railroads; historic farms and ranches; historic downtowns; and places where old structures are indicated on historic maps but are no longer standing.

Land use change accommodated under the 2035 General Plan would involve grading, excavation, and potentially other ground-disturbing activities which could disturb or damage as-yet-undiscovered archaeological resources, paleontological resources, or human remains. It is possible that resources have been covered by deposits that could be removed, exposing the cultural deposits during project-related construction activities.

## Relevant Policies and Programs of the 2035 General Plan

- ▶ **Policy OSC-5.1:** The City will use geologic mapping and cultural resource databases to determine the likely presence of resources and the appropriate level of cultural resources analysis and mitigation required for new developments.
- ▶ **Policy OSC-5.2:** New developments shall be designed to avoid adverse impacts to any known archaeological and paleontological resources, wherever feasible.
- ▶ **Program OSC-5.1: Cultural Resource Review and Mitigation.** New development projects that could have significant adverse impacts to prehistoric or historic resources shall be required to assess impacts and provide feasible mitigation. The following steps, or those deemed equally effective by the City, will be followed:
  - ▶ Request information from the Native American Heritage Commission regarding Native American groups that may have important sites in areas that could be affected by project development.
  - ▶ Involve the local Native American community in determining the appropriate mitigation of impacts to significant prehistoric sites.
  - ▶ Consult updated information from the Northwest Information Center regarding cultural resource sites, structures, or landscapes that could be affected by project activities.

- ▶ Based upon the sensitivity of the subject proposed project area, additional technical work may be required. Where a cultural resources survey has not been performed:
  - a pedestrian survey may be required in areas of low sensitivity;
  - a pedestrian survey will be required in areas of moderate and high sensitivity; and
  - Based on findings of the pedestrian survey, additional technical studies may be required, such as geoarchaeological sensitivity analysis, Native American consultation, ethnographic studies, or other analysis scaled according to the nature of the individual project.
- ▶ Determination of impacts, significance, and mitigation (i.e., site monitors, avoidance, and/or other measures) shall be made by a qualified professional archaeologist or architectural historian, as appropriate.
- ▶ If impacts cannot be avoided through project design, appropriate and feasible treatment measures are required. Such measures may consist of, but are not limited to actions, such as data recovery excavations, photographic documentation, or preparation of design drawings documenting the resource subject to significant impacts.
- ▶ Provide the Northwest Information Center with appropriate California Department of Parks and Recreation site record forms and cultural resources reports documenting resources that may be identified through technical work performed to review projects accommodated under the General Plan.
- ▶ If human remains are discovered during construction of projects occurring under General Plan buildout, the project proponent and landowner shall comply with California Health and Safety Code Section 7050.5 and California Public Resources Code Section 7050.5.

## Conclusion

The City has developed policies and programs in the 2035 General Plan to minimize impacts to archaeological resources, including requiring cultural and paleontological resource investigations to be conducted for new development that has the potential to inadvertently damage or destroy archaeological resources, paleontological resources, or human remains during construction activities. While the actions encouraged and required by these policies and programs would, in most cases, avoid or minimize impacts on archaeological resources, paleontological resources, or human remains, it is not always feasible to preserve significant resources in place. The impact is **significant**.

## Mitigation Measure

The policies and programs of the 2035 General Plan and compliance with other relevant requirements represent all feasible mitigation. Because it is possible that all significant archaeological and paleontological resources will not be feasibly preserved, and because there is not additional feasible mitigation, the impact would be **significant and unavoidable**.

### 3.5 GREENHOUSE GAS EMISSIONS

Greenhouse gas (GHG) emissions have the potential to adversely affect the environment because such emissions contribute, on a cumulative basis, to global climate change. Cumulative impacts are the collective impacts of one or more past, present, and future projects that, when combined, result in adverse changes to the environment. Global climate change has the potential to result in sea level rise (resulting in flooding of low-lying areas), to affect rainfall and snowfall (leading to changes in water supply), to affect temperatures and habitats (affecting biological resources), and to result in many other adverse effects. The proper context for addressing this issue in an EIR, then, is within an assessment of cumulative impacts. Although it is unlikely that the Specific Plan would, by itself, contribute significantly to global climate change, cumulative emissions from many projects and adopted plans could impact global GHG concentrations and the climate system.

Legislation and executive orders related to climate change in California have established a statewide context for analyzing GHG emissions and climate change, despite the global nature of this issue. The statewide context was established by Assembly Bill (AB) 32 (2006), the California Global Warming Solutions Act of 2006, which requires reduction of statewide GHG emissions to 1990 levels by 2020, and further reinforced with Governor's Executive Orders, such as S-3-05.

GHGs are typically analyzed by "sector" or type of activity that results in GHG emissions. Land use development projects, such as those accommodated under the General Plan, are not their own GHG emissions sectors because these projects would involve multiple activities that directly result in GHG emissions (such as transportation, electricity use, and waste generation). These activities are the sectors analyzed for their contribution to GHG and are described in more detail below.

Land use decisions and development projects can affect the generation of GHG emissions from multiple sectors. Development projects can result in direct or indirect GHG emissions that would occur on- or off-site. For example, people who reside in and visitors to a development project would drive vehicles that generate on- and off-site GHG emissions, which are associated with the transportation sector. Electricity consumed in structures within a project would indirectly cause GHGs to be emitted at a utility provider.

Some major GHG emission sectors can be affected by local government actions, while others cannot. The California Air Resources Board Climate Change Scoping Plan identifies the main GHG emission sectors that account for the majority of GHG emissions generated within California (ARB 2009 and 2014a):

- ▶ **Transportation:** This is the largest sector of GHG emissions in California and is normally the dominant sector for development projects and plans. This sector represents the GHG emissions associated with on-road motor vehicles, recreational vehicles, aviation, ships, and rail.
- ▶ **Electricity:** This sector represents the GHG emissions associated with use and production of electrical energy. Approximately 25% of electricity consumed in California is imported, thus, GHG emissions associated with out-of-state electricity production are also included as part of this sector.
- ▶ **Industry:** This sector represents the GHG emissions associated with industrial facilities and activities (e.g., manufacturing plants, refineries). Industrial sources are predominately comprised of stationary sources (e.g., boilers, engines) associated with process emissions.

- ▶ **Commercial and Residential:** Commercial and residential GHG emission sources include area sources, such as landscape maintenance equipment, fireplaces, and natural gas consumption for space and water heating.
- ▶ **Agriculture:** This sector represents the GHG emissions associated with agricultural processes. Agricultural sources of GHG emissions include off-road farm equipment, irrigation pumps, residue burning, livestock, and fertilizer volatilization.
- ▶ **High Global Warming Potential:** This sector represents the generation of high global warming potential GHGs. Examples of high global warming potential GHG sources include refrigerants and electrical insulation. Although these GHGs are typically generated in much smaller quantities than carbon dioxide (CO<sub>2</sub>), their high global warming potential results in considerable CO<sub>2</sub> equivalent (CO<sub>2</sub>e).
- ▶ **Recycling and Solid Waste:** This sector represents the GHG emissions associated with waste management facilities and landfills.

The GHG emission sectors described above are subject to varying degrees of state regulation that will reduce GHG emissions on a statewide level. For example, legislation already in effect will achieve statewide reductions of GHG emissions associated with electricity production, industry, and motor vehicles. GHG emission sectors, such as transportation and electricity, are regulated by the implementation of statewide emission reduction programs (e.g., vehicle emissions standards, renewable energy portfolio standards). It is anticipated that future legislation and regulations at the state and federal levels would further reduce GHG emissions, with different reduction potential available for each sector. Depending on the type of state standard and the GHG emission sector targeted by a standard, the ability of local government actions to achieve further significant GHG reduction could be limited to varying degrees.

Land use and building patterns resulting from local government development policies can affect vehicle miles traveled (VMT), water use, wastewater generation, solid waste generation, and building energy use. However, local governments do not have control over vehicle emissions technology, fuel economy standards, or building code standards. Nonetheless, local governments, such as the City, would play a role in achieving statewide emission reduction goals. The ability to influence land use decisions and reduce VMT, provide services to its population (e.g., recycling service, waste management, and wastewater treatment), and provide public education and incentives (e.g., energy and water conservation) to its citizens are options for local governments to reduce GHG emissions generated in their jurisdictions.

### 3.5.1 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

#### METHODOLOGY

This analysis of the proposed construction and operational GHG emissions use the same methodologies as those described in Section 3.2, “Air Quality,” which are consistent with the most current guidance from the Bay Area Air Quality Management District (BAAQMD). In addition to air quality pollutants, the California Emissions Estimator Model (CalEEMod) Version 2013.2.2 also estimates GHG emissions associated with construction and operational activities. For operational emissions, CalEEMod Version 2013.2.2 also estimates indirect GHG emissions associated with electricity consumption, solid waste disposal, and water consumption. See Appendix C for detailed GHG calculations and inputs.

It is important to note that CO<sub>2</sub> emissions consistent with buildout of the 2035 General Plan are not necessarily “new” emissions, given that the General Plan itself does not create “new” emitters (e.g., people) of GHGs. In other words, the 2035 General Plan would not create new people, and would not necessarily accommodate new activities. Rather, the 2035 General Plan would accommodate movement in people, jobs, and activities from one location to another. Therefore, instead of reducing the total mass of community-generated GHG emissions, it is important to increase the *GHG efficiency* of the community, or the *rate* of GHG emissions per capita and per employee. The 2035 General Plan would need to accommodate population in a way that allows for a lower *rate* of GHG generation to achieve the state’s goals for GHG emissions, as described in the text of AB 32 and directed by S-3-05. An example of such required rates prescribed by BAAQMD are described further below.

Emissions estimates in Section 3.2, “Air Quality” evaluated the criteria air pollutants and ozone precursors associated with the proposed 2035 General Plan land uses, which is the net change in operational emissions associated with the proposed project. However, for GHG emissions, as described above, it is important to evaluate the City’s GHG efficiency as a whole because all land uses, regardless of existing or new development would contribute and affect the GHG efficiency. Therefore, this GHG analysis evaluates operational GHG emissions associated with existing and proposed 2035 General Plan land uses at the buildout year (2035). As described above, the proposed 2035 General Plan land uses were modeled using CalEEMod, which would include the most recent Title 24 energy efficiency standards for buildings.

However, the vast majority of existing buildings (and nearly 100 percent of housing units) in the City were built prior to Title 24 standard energy efficiency contained in CalEEMod and therefore would operate at a much lower energy efficiency than land uses built as part of the 2035 General Plan. In addition, 69 percent of the housing stock was constructed prior to 1990 and likely has minimal, energy efficiency features (U.S. Census 2014).

In order to avoid overestimating the energy efficiency of existing land uses, the baseline energy consumption in units of kilowatt-hours per year (kWh/yr) and therms per year was obtained from Suisun City’s 2010 GHG inventory. The City’s 2010 GHG inventory used empirical energy consumption data from Pacific Gas & Electric (PG&E), which would represent the energy consumption rate and efficiency of existing land uses. Therefore, the energy consumption rates (i.e., kWh/yr and therms/yr) from 2010 for existing land uses were assumed to remain constant until 2035, which provides a “business as usual” scenario. Although the amount (i.e., kWh or therms) of electricity and natural gas consumed by existing land uses was assumed to remain constant, the GHG intensity (i.e., GHG emissions per kWh consumed) of electricity consumed would change as utilities add renewable energy sources. Thus, electricity consumption for existing land uses were multiplied by future electricity intensity factors similar to the proposed 2035 General Plan land uses, to calculate future GHG emissions associated with existing land use electricity consumption.

For all other existing land use GHG emission sources, CalEEMod was used to model operational GHG emissions. Because these other GHG emission sources would not be affected by increased resource efficiency factors contain in CalEEMod, no off-model calculations were performed. Existing land use operational GHG emissions were then added to the proposed 2035 General Plan land use operational emissions to calculate the City’s total GHG emissions shown in Table 3.5-1.

Statewide measures associated with the AB 32 Scoping Plan were also applied to the City’s future operational GHG emissions. These measures would reduce GHG emissions from future land uses on a statewide level without additional actions from the City. It is important when applying statewide reduction measures to not overestimate

the reduction because there may be uncertainties in implementation or application of the measures to the specific projects, which could falsely underestimate the GHG reduction burden on the City. Thus, this analysis only applies statewide reductions that clearly will be implemented and applicable to the proposed project. For transportation-related emissions, Pavley I and the Low Carbon Fuel Standard were applied to mobile source emissions using the ARB-approved model EMFAC2011. Because they would affect vehicle emissions standards and lifecycle fuel GHG intensity, Pavley I and LCFS would affect both existing and new land uses equally. For electricity-related emissions, the Renewable Portfolio Standard (RPS) was applied to electricity-related emissions generated by existing and new land uses. Although the energy efficiency of existing and new land uses would vary, in the buildout year, all land use types would generate the same GHG emissions per kWh consumed assuming all electricity would continue to be provided by PG&E.

## THRESHOLDS OF SIGNIFICANCE

An impact related to global climate change is considered significant if the proposed project would:

- ▶ Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment; or
- ▶ Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs.

As stated in Appendix G, the significance criteria established by the applicable air quality management district may be relied on to make the above determinations. This analysis evaluates the proposed project's air quality impacts pursuant to the BAAQMD 2010 CEQA Air Quality Guidelines. BAAQMD's analysis provides substantial evidence in support of the proposed thresholds. Based on guidance from BAAQMD, the City has elected to use the following significance thresholds. Pursuant to the 2010 CEQA Air Quality Guidelines, the proposed project would be considered to significant if it would generate annual GHG emissions exceeding 1,100 MT CO<sub>2</sub>e and the project's GHG efficiency would exceed 4.6 MT CO<sub>2</sub>e/SP/yr.

This EIR also qualitatively evaluates impacts to Suisun City associated with climate change.

## IMPACT ANALYSIS

**IMPACT 3.5-1** **Increase in Greenhouse Gas Emissions.** *The 2035 General Plan would accommodate land use change that would increase GHG emissions at a rate higher than what is required statewide to achieve California's statewide mandate under AB 32. Climate change attributable to human-caused GHG emissions is a **significant** cumulative impact. The 2035 General Plan policies are implemented, in part, through development of the City's Draft Climate Action Plan, which addresses GHG emissions associated with energy use, water and wastewater, and solid waste. The Draft Climate Action Plan reduction measures have been demonstrated to reduce GHG emissions at a level that is consistent with, and supportive of the State of California's legislative emissions mandate embodied in AB 32. The reduction measures identified in the Draft Climate Action Plan illustrate how the City can meet the 2020 GHG reduction target and put the City on a trajectory towards longer-term reduction targets. The impact is **less than cumulatively considerable**.*

Long-term growth anticipated under the 2035 General Plan would generate direct and indirect emissions of GHGs from mobile, energy, area, solid waste, and waste-related emission sources. Direct GHG emissions are those emissions that are generated at the location of consumption or use. For example, mobile-source emissions are

direct emissions because GHG emissions are generated as a vehicle begins to move. Conversely, indirect emissions are those emissions that occur at a different time or location from the point of consumption or use. For example, electricity-related GHG emissions are indirect emissions because as a consumer uses electricity at his or her home, the fuel combustion and emissions associated with creating that electricity likely occurred off-site or at a different time.

A majority of the proposed project's GHG emissions would be generated by mobile sources. Mobile-sources would include vehicle trips associated with employee commutes, errands, recreation, and other trips in passenger vehicles of future residents of and visitors to the City. Such emissions would also include commercial trucking activity associated with moving goods to and from commercial and industrial uses.

Direct area-source GHG emissions would be associated with activities, such as landscaping and maintenance of proposed land uses, and distribution of natural gas to heat spaces and water and provide cooking fuel. Energy-source GHG emissions would be generated from electricity consumption and natural gas combustion.

Indirect GHG emissions would be generated from solid waste disposal and water consumption. Solid waste-related GHG emissions are generated during decomposition of solid waste, which typically occur in different geographical location (e.g., landfill) than where the solid waste is generated (e.g., residence, commercial land use). Water-related indirect GHG emissions are those associated with embedded electricity used to convey, distribute, and treat water for potable use.

GHG emissions would be predominantly in the form of CO<sub>2</sub>. CO<sub>2</sub> emissions persist in the atmosphere for a much longer period of time than emissions of criteria air pollutants, such as ozone and particulate matter. Although emissions of other GHGs, such as methane (CH<sub>4</sub>) and nitrous oxide (N<sub>2</sub>O), are important with respect to global climate change, emissions levels of other GHGs are less dependent on the land use and circulation patterns associated with the 2035 General Plan than are levels of CO<sub>2</sub>.

A primary focus of any general plan is on long-term physical development and conservation within the community. Although a general plan can also influence energy efficiency to some extent (e.g., site planning for proper solar orientation, new and more energy efficient buildings or renovations), the City does not have control over the sources of electricity (e.g., renewable) used in buildings. General plans are by their nature less focused on the details of building construction and architecture and are more focused on overall spatial development patterns and land uses.

GHG emissions attributable to the 2035 General Plan were analyzed and are presented in this section at a programmatic level of detail. The City cannot precisely estimate at the programmatic level, the GHG reduction benefits of its various land use, transportation, and design policies. Various land use, community design, conservation, and circulation policies noted below, "Relevant Policies and Programs of the 2035 General Plan," would promote increased GHG efficiency during buildout of the 2035 General Plan. Due to the nature of general plan policy, the fact that the City's policies and programs would be incorporated in a variety of land use changes and City actions over a long period of time, and because the City cannot predict the degree to which policies and programs would be incorporated into projects during buildout of the General Plan, the precise effect of these policies and programs is not knowable as of the writing of this document.

The main influences available to the City on community-generated GHG emissions relate to land use planning, transportation planning, and community design approaches that reduce local VMT. The City, through the 2035 General Plan, can influence density, land use mix, community design, the balance between jobs and housing, and other important factors that affect travel behavior. Mobile-source GHG emissions (vehicle trips) would be the primary source of GHG emissions attributable to implementation of the 2035 General Plan. Transportation is also the largest source of GHG emissions in California, representing approximately 36.5% of 2012 annual statewide GHG emissions (ARB 2014b). VMT is the most direct indicator of CO<sub>2</sub> emissions for most land use development plans and projects, and the 2035 General Plan is no exception. As discussed above, CO<sub>2</sub> emissions are the best indicator of total GHG emissions for development projects and plans. Buildout of the 2035 General Plan is estimated to result in a net increase of approximately 283,436 new VMT per day with respect to current (2010) VMT levels (Fehr & Peers 2014). These trips would be the primary source of GHG emissions attributable to General Plan implementation.

However, the estimated VMT associated with General Plan implementation is likely overestimated. This is because the VMT calculations were derived from a traditional travel demand model, which does not consider a number of factors incorporated into this General Plan that tend to reduce VMT including: shifts in travel to transit; bike, and walk modes; improved local street connectivity; and mixed-use projects with “balanced land uses.” Policies and actions in the 2035 General Plan related to travel demand management, increased density, shared parking, and workforce housing would also reduce VMT. Extensive research has shown that the above planning techniques can reduce vehicle trips, increase non-automobile mode share, reduce trip lengths, and reduce VMT. Increases in density and development intensity are correlated with reduced vehicle travel (on a per unit or square foot basis). Mixing complementary land uses in a neighborhood setting increases internal trip “capture.” Many different urban design approaches are used to increase transportation connectivity and provide high-quality bicycle, pedestrian, and transit facilities, increasing the attractiveness of non-automobile modes of travel. Access to regional destinations involves the strategic placement of land uses near regional attractions. These transportation and land use-related VMT reductions would also affect trip rates and trip distances of existing land uses. Thus, reductions would occur for both proposed and existing land uses. A wide array of 2035 General Plan policies and actions incorporate these concepts. The 2035 General Plan includes extensive policies and actions that will reduce VMT, but they are difficult to quantify with the travel demand model that was developed to support this General Plan and EIR. As such, the VMT analysis in this section is conservative because it does not account for local, neighborhood, and communitywide VMT reduction benefits.

Construction-related activities associated with buildout of the 2035 General Plan land uses are anticipated to result in approximately 8,941 metric tons of CO<sub>2</sub>e. Because operational emissions would occur for the lifetime of the built out community, these sources (rather than those attributable to temporary construction) are much more important to understanding the General Plan’s overall GHG emissions profile. Table 3.5-1 presents the City’s total operational emissions (i.e., existing and 2035 General Plan land uses) at full buildout of the 2035 General Plan. At full buildout, the 2035 General Plan could accommodate a total population of approximately 32,400 and 10,900 local jobs.

If the total operational GHG emissions occurring at full buildout of the 2035 General Plan were distributed evenly on a per capita basis, the 2035 General Plan would result in GHG emissions at an average rate of approximately 5 MT of CO<sub>2</sub>e per population + employment per year. Based on these estimates, land use change accommodated under the 2035 General Plan would not meet the BAAQMD GHG efficiency threshold of 4.6 MT of CO<sub>2</sub>e per SP. However, with the application of applicable statewide GHG reduction measures, buildout of the General Plan would generate emissions of approximately 4 MT of CO<sub>2</sub>e per population + employment per year, which would be

| <b>Table 3.5-1<br/>Summary of Modeled Emissions of Greenhouse Gases</b>   |  |
|---|--|
| <b>Source</b>   | <b>Emissions (MT CO<sub>2</sub>e/yr)</b> |
| Area  | 1,624                                    |
| Energy  | 43,569                                   |
| Solid Waste   | 7,572                                    |
| Water   | 2,823                                    |
| Mobile  | 156,315                                  |
| <b>Total Unmitigated Operational Emissions <sup>1</sup></b>   | <b>211,905</b>                           |
| <b>Total Operational Emissions with Statewide Reductions <sup>1,2</sup></b>   | <b>167,806</b>                           |
| <b>Operational GHG Efficiency at Buildout of 2035 General Plan <sup>1</sup></b>   | <b>5.2 MT/capita/yr, 3.9 MT/SP/yr</b>    |
| <p>Notes: CO<sub>2</sub>e = carbon dioxide equivalent; GP = 2035 General Plan; MT/yr = metric tons per year; SP = service population; “-” = no data. Emissions modeled using the CalEEMod Version 2013.2.2 computer model, based on trip generation rates obtained from the analysis prepared for the General Plan. Trip generation rates and VMT estimates provided by Fehr &amp; Peers 2014. Refer to Appendix C for detailed assumptions and modeling output files.</p> <p>*Totals may not add exactly due to rounding.</p> <p><sup>1</sup> Operational GHG emissions include both existing and proposed 2035 General Plan land uses.</p> <p><sup>2</sup> Statewide reductions include Pavley I and Low Carbon Fuel Standard (LCFS) for mobile-source emissions and Renewable Portfolio Standard for electricity-related emissions. These statewide measures were applied to all land uses (i.e., existing and proposed 2035 General Plan land uses). Pavley I and LCFS would affect all vehicles regardless of if they were associated with existing or new development. In addition, RPS would affect the electricity intensity of electricity used by existing and new development. However, increases in energy efficiency associated with future Title 24 standards (i.e., CalGreen) were only applied to the proposed 2035 General Plan land uses that would be built compliant with those standards. It was assumed that existing land uses would continue to operate at the same level of energy efficiency, which is also referred to as “business as usual.”</p> <p>Source: Modeled by AECOM in 2014</p> |  |

consistent with Suisun City’s “fair share” of GHG emissions reductions needed statewide to achieve California’s 2020 GHG target established under AB 32.

It is not yet clear what the net GHG emissions would actually be under the buildout of the 2035 General Plan, given the uncertainty of future legislative and regulatory actions. Market, demographic, and economic factors could affect the density and mix of land uses actually constructed. Therefore, actual CO<sub>2</sub> emission rates, as computed on a project-by-project basis, could vary. Many factors that would be used to calculate the net change in GHG emissions attributable to individual projects under the 2035 General Plan are either unknown at this time or outside the control of the City.

### Relevant Policies of the 2035 General Plan

As noted, the 2035 General Plan includes a variety of policies aimed at reducing GHG emissions from transportation, energy, water, and other construction and operational activities. The proposed Land Use Diagram supports and enables the implementation of these proposed policies and program. Specifically, the 2035 General Plan balances residential land uses with destination land uses and provides the opportunity for local services and employment (although the City cannot guarantee that a majority of residents will work locally). The General Plan calls for transit-supportive development in areas near the train station. The General Plan calls for complete neighborhoods and diversity of land uses, including destination land uses within close proximity to residents. This type of development would enable residents to have easy access to daily amenities by walking, bicycle, or public

transit instead of the need for a car. Table 3.5-2 summarizes the climate change-related policies and actions contained in the 2035 General Plan.

| <b>Table 3.5-2</b><br><b>2035 General Plan Policies Designed to Reduce Greenhouse Gas Emissions in Suisun City</b> |  |                               |
|--|--|-------------------------------|
| Policy   |  | Affected GHG Emissions Sector |
| Policy PHS-3.3   | The City will require projects that could result in significant air pollutant emissions impacts to reduce operational emissions from vehicles, heating and cooling, lighting, equipment use, and other proposed new sources.   | Transportation, Energy        |
| Policy PHS-3.5   | The City's vehicle fleet will be updated over time with more fuel-efficient, low-emission vehicles.  | Transportation                |
| Policy PHS-3.6   | The City will increase the use of low-maintenance, climate-appropriate landscaping and low-emissions landscape maintenance equipment in parks and other City-maintained landscaped areas and open space.   | Transportation                |
| Policy PHS-4.1   | The City will coordinate with the Association of Bay Area Governments, Solano County, the Bay Area Air Quality Management District, and California Air Resources Board, and other relevant agencies, to orient its plans, policies, and regulations to take best local advantage of regional and statewide AB 32-related infrastructure investment and other programs.   | All                           |
| Policy PHS-4.2   | The City will guide land use change, direct investments, and apply its fees and programs to encourage more GHG-efficient development patterns, as feasible.  | All                           |
| Policy PHS-4.3   | The City will actively pursue funding for transportation systems that promote public transit, bicycling, and pedestrian travel and other needed infrastructure, building and public realm energy efficiency upgrades, renewable energy production, land use-transportation modeling, and other projects to reduce local GHG emissions.   | Transportation, Energy        |
| Policy PHS 4.4   | The City will collaborate with the Association of Bay Area Governments, Solano County, the Bay Area Air Quality Management District, and California Air Resources Board, and other relevant agencies, where feasible, to fund transportation and other infrastructure and service improvements that increase local GHG efficiency  | Transportation, Energy        |
| Policy PHS-4.5   | The City will, as feasible, conduct regionally coordinated land use, transportation, and public facility planning to support GHG-efficient local development.  | Transportation                |
| Policy PHS-4.6   | The City will use the Local Hazard Mitigation Plan and other opportunities for long-term disaster recovery to include adaptation strategies associated with the possible impacts of climate change, most notably the potential for sea level rise. Possible strategies include, but are not limited to, building moratoriums in potentially affected areas, the construction of raised foundations in new development, and the construction of levees and dikes to prevent increased sea levels from affecting the City. | Adaptation                    |
| Policy PHS-5.2   | New developments shall incorporate low impact development (LID) strategies, such as rain gardens, filter strips, swales, and other natural drainage strategies, to the greatest extent feasible, in order to reduce stormwater runoff levels, improve infiltration to replenish groundwater sources, reduce localized flooding, and reduce pollutants close to their source.   | Water, Wastewater             |
| Policy PHS-5.3   | New developments should minimize the land area covered with driveways, loading areas, and parking lots in order to reduce stormwater flows, reduce pollutants in urban runoff, recharge groundwater, and reduce flooding.  | Wastewater                    |
| Policy PHS-5.4   | New developments should use permeable surfaces for hardscape, where feasible.  | Wastewater                    |
| Policy PHS-6.1   | The City will promote healthy lifestyles by encouraging a land use pattern and community design that includes public spaces to facilitate social interaction.  | Adaptation                    |

**Table 3.5-2  
2035 General Plan Policies Designed to Reduce Greenhouse Gas Emissions in Suisun City**

| Policy          |  | Affected GHG Emissions Sector |
|-----------------|--|-------------------------------|
| Policy PHS-6.2  | The City will ensure that the land use pattern and community design support walking and biking to promote physical activity by providing safe infrastructure such as sidewalks, bike lanes, and trails, and by providing access to parks, recreation services, and open space.   | Transportation                |
| Policy PHS-6.3  | The City will allow for convenient transportation options that accommodate people of all ages and physical abilities, including complete and safe sidewalks, public transit, and bicycle lanes.  | Transportation                |
| Policy PHS-6.4  | The City will increase access to parks and recreation facilities and encourage the development of new parks in areas lacking sufficient facilities.  | Transportation                |
| Policy PHS-8.1  | The City will encourage access to grocery stores for all residents by allowing the development of such uses within walking or biking distance of all homes.  | Transportation                |
| Policy PHS-11.1 | The City will coordinate with Solano County Water Agency, the California Department of Water Resources, the San Francisco Bay Conservation and Development Commission, and others to plan, construct, repair, and maintain flood control facilities protecting Suisun City that are capable of protecting existing and proposed structures from flooding, in accordance with state law.  | Adaptation                    |
| Policy PHS-11.2 | The City will use the most current flood hazard and floodplain information from state and federal agencies (such as the State Department of Water Resources, the Federal Emergency Management Agency, and the Army Corps of Engineers) as a basis for project review and to guide development in accordance with federal and state regulations.  | Adaptation                    |
| Policy PHS-11.3 | The City will regulate development within floodplains according to state and federal requirements to minimize human and environmental risks and maintain the City's eligibility under the National Flood Insurance Program.  | Adaptation                    |
| Policy PHS-11.5 | The City will require that structures intended for human occupancy within the 100-year floodplain are appropriately elevated and flood proofed for the profile of a 100-year flood event. Flood proofing may include a combination of structural and nonstructural additions, changes, or adjustments to structures that reduce or eliminate flood damage to real estate or improved real property, water and sanitary facilities, structures, and their contents. | Adaptation                    |
| Policy PHS-11.9 | The City will support Solano County's Sea Level Rise Strategic Program, as feasible.   | Adaptation                    |
| Policy CCD-1.13 | The City will maintain and enhance a strong pedestrian orientation in the Downtown Waterfront Specific Plan Area through the design of buildings, streets, and sidewalks.  | Transportation                |
| Policy CCD-1.16 | Walls and landscape buffers are not encouraged between residential and nonresidential uses unless there is no feasible alternative through site planning and design to address noise, vibration, light, glare, air pollution, and or other demonstrated physical compatibility issues between adjacent land uses.  | Transportation                |
| Policy CCD-2.1  | The City will support projects in existing developed areas to add and enhance pedestrian connections, public art, natural drainages, shade trees and other landscaping, and make other improvements to the public realm, as needed, to improve the quality of design in existing neighborhoods and business districts.   | Transportation                |
| Policy CCD-2.3  | The City will support the construction of new pedestrian bridges, roadways, trails, as appropriate and as funding is available to increase connectivity between Downtown and other areas of Suisun City and between Suisun City and Fairfield. As new connections are created, they should add appropriate landscaping, drainage, and pedestrian and bicycle amenities.  | Transportation                |
| Policy CCD-4.1  | New streets shall provide comfortable travel areas for pedestrians, bicyclists, and drivers to facilitate multi-modal travel for people of all ages.   | Transportation                |

**Table 3.5-2  
2035 General Plan Policies Designed to Reduce Greenhouse Gas Emissions in Suisun City**

| Policy          |   | Affected GHG Emissions Sector |
|-----------------|---|-------------------------------|
| Policy CCD-4.2  | New developments shall provide connecting streets with short blocks that create a pedestrian-scale environment.   | Transportation                |
| Policy CCD-4.3  | New developments shall provide direct access routes to buildings from sidewalks and parking areas for pedestrians and bicyclists.   | Transportation                |
| Policy CCD-4.5  | New developments shall provide for trees at an average frequency of one every 20 feet on center along City streets.   | Transportation                |
| Policy CCD-4.6  | Redevelopment projects should incorporate new trees into project design, as feasible.   | Transportation, Sequestration |
| Policy CCD-4.7  | The City will add street trees in existing developed areas, as feasible, with the goal of a complete street tree canopy.  | Transportation, Sequestration |
| Policy CCD-4.9  | Benches, trash receptacles, drinking fountains, bus shelters, signage, and other improvements should be located along sidewalks and designed to enhance the visual environment and provide a welcoming place for pedestrians.   | Transportation                |
| Policy CCD-4.10 | The City will work with Caltrans to install aesthetic and functional improvements along the SR 12 corridor, including landscaping, trees, pedestrian and bicycle pathways, separated from the travelway, and noise attenuation improvements.  | Transportation                |
| Policy CCD-5.1  | The City will encourage – through entitlement streamlining, flexibility in development standards, fee structures, and other incentives – infill development of vacant or underutilized properties within Opportunity Areas.   | Transportation                |
| Policy CCD-5.2  | The City will encourage creative design approaches, where necessary, to allow for mixed-use development within Opportunity Areas.   | Transportation                |
| Policy CCD-7.3  | New commercial development shall provide secure locking of bicycles in locations that can be observed from inside proposed buildings.   | Transportation                |
| Policy LU-1.1   | The City will encourage reinvestment in existing buildings and development of vacant and underutilized properties within existing neighborhoods.  | Transportation                |
| Policy LU-1.2   | The City will encourage renovation, remodeling, additions, and redevelopment of single-family homes in order to help add diversity to the existing housing stock.   | Energy, Water                 |
| Policy LU-1.3   | The City will guide land use change so that public gathering places, commercial services, recreational other civic uses, and cultural destinations are within walking or biking distance, or accessible via public transit to as many Suisun City residents as feasible.                      | Transportation                |
| Policy LU-2.2   | The City will encourage business and personal services, government and other civic uses, professional offices, and high-density residential uses to locate within the Priority Development Area.  | Transportation                |
| Policy LU-2.3   | The City will accommodate transit-oriented, mixed-use, residential and employment development within the City's Priority Development Area between present and 2035.   | Transportation                |
| Policy LU-3.1   | In the Northwest Downtown Opportunity Area, the City will promote transition of underutilized light industrial and service-oriented uses to entertainment, retail, higher-density residential, and professional office uses.  | Transportation                |
| Policy LU-3.2   | In the Northeast Downtown Opportunity Area, the City will encourage development that is specifically designed with an orientation to the train station. This may include, but is not limited to higher-density residential uses and employment uses that would be accessed by rail commuters. | Transportation                |
| Policy LU-3.4   | In the South Sunset Avenue Area, the City will encourage additional retail, commercial service, professional office, and similar development that is oriented to, and accessible by nearby residential development.   | Transportation                |

**Table 3.5-2  
2035 General Plan Policies Designed to Reduce Greenhouse Gas Emissions in Suisun City**

| Policy        |  | Affected GHG Emissions Sector |
|---------------|--|-------------------------------|
| Policy LU-3.5 | In the North Sunset Avenue Area, the City will facilitate higher-intensity retail, commercial service, and professional office development that is oriented to, and accessible by nearby residential development.  | Transportation                |
| Policy LU-4.1 | The City will support the provision of facilities, services, or infrastructure only in areas that are planned for development. The City will not induce growth by supporting the provision of services or infrastructure in areas that are not planned for development under the General Plan.   | Transportation, Construction  |
| Policy LU-4.2 | The City will only allow annexation of land that is on or adjacent to lands with available urban services.   | Transportation, Construction  |
| Policy LU-4.3 | Annexation requests shall provide an analysis of infrastructure and public facilities demand, as well as the financing necessary to support planned development.   | Transportation, Construction  |
| Policy LU-4.5 | The City will create a fee structure and public investment strategy that provides incentives for compact development within the Downtown Waterfront Specific Plan Area, Opportunity Areas, and land within existing City limits.   | Transportation                |
| Policy LU-4.6 | The City will maintain development and infrastructure standards that promote infill development and allow lot consolidation for redevelopment, where necessary.  | Transportation                |
| Policy LU-4.7 | The City will support specific plans, redevelopment plans, corridor plans, and other small area plans that promote infill development and reinvestment.  | Transportation                |
| Policy LU-4.8 | The City will use performance-based standards to address important aspects of land use compatibility (air, noise, vibration, heavy truck traffic, light, and glare) without impeding mixed-use infill development.   | Transportation                |
| Policy T-1.1  | The City will review and condition developments to maintain level of service E or better during peak travel periods, as feasible.  | Transportation                |
| Policy T-1.6  | The City will design and operate streets and intersections to enable safe access for all users, including pedestrians, bicyclists, motorists, and transit riders of all ages and abilities.  | Transportation                |
| Policy T-1.7  | The City will maintain a traffic impact fee program designed to collect fair-share contributions from new developments to construct off-site vehicular, bicycle, and pedestrian improvements.  | Transportation                |
| Policy T-1.8  | The City will consult with other agencies, such as the Solano Transportation Authority, Solano County, Caltrans, and the Metropolitan Transportation Commission on assessing travel demand impacts to facilities managed by other agencies. The City will collaborate as a part of a coordinated regional program on collection of impact fees for regional transportation improvements. | Transportation                |
| Policy T-2.1  | The City will require and maintain an interconnected street network with short blocks to support pedestrian, bicycle, transit, automobile, and emergency access.   | Transportation                |
| Policy T-2.2  | New streets shall be arranged in a grid or other highly connected pattern so that pedestrians, bicyclists, and drivers have multiple, direct routes to nearby destinations.  | Transportation                |
| Policy T-2.3  | New developments shall be highly connected internally and connected with adjacent developed.   | Transportation                |
| Policy T-2.4  | The City will support improvements that connect existing gaps in the transportation system, and that provide visual cues directing users onto through streets.   | Transportation                |
| Policy T-2.5  | The City prefers direct connections that allow cars, bikes, and pedestrian through traffic over “doglegs” or “T” intersections.  | Transportation                |
| Policy T-2.7  | The City will support improvements to regional connectivity, including connections to Fairfield, SR 12, Jepson Parkway, and I-80 that reduce trip lengths and provide redundant routes for emergency responders.   | Transportation                |

**Table 3.5-2  
2035 General Plan Policies Designed to Reduce Greenhouse Gas Emissions in Suisun City**

| Policy        |   | Affected GHG Emissions Sector |
|---------------|---|-------------------------------|
| Policy T-2.8  | The City will use unified streetscapes and signage to create visual links for pedestrians, cyclists, and motorists and communicate routes that connect to the Downtown Waterfront Area.   | Transportation                |
| Policy T-3.1  | The City will collaborate with other local, regional, and state agencies, as well as employers to encourage carpooling, carpool parking, flexible work schedules, ridesharing, and other strategies to reduce commute period travel demand.   | Transportation                |
| Policy T-3.2  | The City will encourage new developments and public facility investments designed to minimize vehicle trips and vehicle miles traveled.   | Transportation                |
| Policy T-3.3  | The City will support programs to provide education, information, facilities, and incentives to encourage City employees to walk, bike, or take transit to work, as funding is available.   | Transportation                |
| Policy T-3.4  | The City's analytical methods, review requirements, impact fees, and investments will be designed and implemented, in part, to reduce VMT by Suisun City residents and to local commercial and employment uses.   | Transportation                |
| Policy T-3.5  | The City's Traffic Impact Fee Program will be designed to provide incentives for new developments that are located and designed to reduce vehicular travel demand.  | Transportation                |
| Policy T-3.6  | New developments that would accommodate 100 full- or part-time employees or more are required to incorporate feasible travel demand management strategies, such as contributions to transit/bike/pedestrian improvements; flextime and telecommuting; a carpool program; parking management, cash out, and pricing; or other measures, as appropriate, to reduce travel demand.   | Transportation                |
| Policy T-6.1  | The City will facilitate construction and maintenance of an accessible, safe, pleasant, convenient, and integrated bicycle and pedestrian system that connects local destinations and surrounding communities. The City will support development of a safe and accessible trail network connected to the on-street bicycle and transportation system that provides transportation and recreational opportunities for Suisun City residents and employees. | Transportation                |
| Policy T-6.2  | The City will require design, construction, operation, and maintenance of "complete streets" that provide safe and convenient access and travel for pedestrians, bicyclists, motorists, and transit users of all ages and abilities.  | Transportation                |
| Policy T-6.3  | The City will proactively coordinate with regional transportation and transit agencies to enhance the local transportation network in a way that encourages bicycling, walking, and transit use.  | Transportation                |
| Policy T-6.4  | The City will collaborate with public transit agencies to provide a safe, efficient, comprehensive and integrated transit system. The City will prioritize improvements to the local bus system that connect with passenger train service.  | Transportation                |
| Policy T-6.6  | Bicycle parking shall be provided near destination land uses, such as retail, commercial and public services, parks, schools, and transit stops.  | Transportation                |
| Policy T-6.9  | The City will encourage construction of transit amenities, such as benches, information systems, shelters, and bike racks near transit stops.   | Transportation                |
| Policy T-6.10 | The City will support improvements designed to encourage transit, such as traffic signal priority, bus queue jump lanes at intersections, exclusive transit lanes, and other techniques, as appropriate.  | Transportation                |
| Policy T-6.12 | New building frontages shall be oriented to pedestrians. Primary pedestrian entries to nonresidential buildings should be from the sidewalk, not from parking areas.  | Transportation                |
| Policy T-6.13 | New developments shall provide pathways that link to sidewalks, trails, streets, and adjacent transit stops.  | Transportation                |

**Table 3.5-2  
2035 General Plan Policies Designed to Reduce Greenhouse Gas Emissions in Suisun City**

| Policy         |  | Affected GHG Emissions Sector |
|----------------|--|-------------------------------|
| Policy T-6.14  | Lockers and showers for cyclists shall be provided for new developments that would accommodate 100 or more full- or part-time employees.   | Transportation                |
| Policy T-7.1   | Parking shall be located and designed to facilitate convenient pedestrian access to and from buildings, trails, sidewalks, and transit stops.  | Transportation                |
| Policy T-7.4   | The City supports shared parking between multiple uses to the extent possible, and will provide incentives for property owners to share underused off-street parking.  | Transportation                |
| Policy T-7.6   | The City will reduce parking requirements for mixed-use developments, for developments providing shared parking, for developments within ¼ mile of a bus stop or the train station, and for developments that incorporate travel demand measures.  | Transportation                |
| Policy T-7.7   | Unless unusual circumstances warrant, the City discourages construction of new surface parking spaces in amounts greater than required by City standards.  | Transportation                |
| Policy T-7.8   | New developments shall break up and distribute any proposed surface parking and shall provide adequate landscaping to achieve at least 50 percent shading of parking areas at maturity.  | Transportation                |
| Policy T-7.9   | The City may waive or relax off-site parking requirements for infill and affordable housing projects that use shared parking, on-street parking, and techniques to reduce vehicular travel demand.   | Transportation                |
| Policy T-7.10  | The City will establish parking maximums for new developments within the Downtown Waterfront Specific Plan Area and all areas within ½ mile walking distance from the train station.   | Transportation                |
| Policy OSC-6.3 | Infill development in the Downtown Waterfront District shall be designed to preserve the overall pedestrian-scaled environment, including building configuration, setting, and orientation.  | Transportation                |
| Policy OSC-7.4 | The City will require the use of water conservation technologies, such as low-flow toilets, efficient clothes washers, and efficient water-using industrial equipment in new construction, in accordance with code requirements.   | Water, Energy                 |
| Policy OSC-7.6 | The City will support Fairfield-Suisun Sewer District efforts to explore the feasibility of using treated wastewater for irrigation in parks, landscaped areas, and other appropriate locations.   | Wastewater, Energy            |
| Policy OSC-7.7 | The City will use climate-appropriate landscaping in new parks and landscaping within rights-of-way in order to reduce water demand and ongoing maintenance costs.   | Water                         |
| Policy OSC-7.8 | New developments shall incorporate climate-appropriate landscaping to reduce water demand and ongoing maintenance costs.   | Water                         |
| Policy-OSC-8.1 | The City will implement relevant policies from the Land Use and Transportation Elements that encourage connected transportation networks, provide for alternate modes of transportation, and encourage mixed-use and compact development patterns to reduce transportation energy use in Suisun City.  | Transportation                |
| Policy OSC-8.2 | The City will require that new developments are designed for maximum energy efficiency, taking into consideration such factors as building-site orientation and construction, articulated windows, roof overhangs, appropriate building and insulation materials and techniques, and other architectural features that improve passive interior climate control. | Energy                        |
| Policy OSC-8.3 | The City will encourage landscaping methods, materials, and designs that promote energy conservation.  | Water, Energy                 |
| Policy OSC-8.4 | The City will preserve existing trees and plant new trees along streetscapes to provide shade.   | Transportation                |
| Policy OSC-8.5 | The City will require that new buildings meet state standards for energy efficiency and provide for renewable energy development and use, to the greatest extent feasible.   | Energy                        |

| <b>Table 3.5-2</b><br><b>2035 General Plan Policies Designed to Reduce Greenhouse Gas Emissions in Suisun City</b> |  |                               |
|--|--|-------------------------------|
| Policy   |  | Affected GHG Emissions Sector |
| Policy OSC-8.6   | The City will encourage the retrofitting of existing buildings with energy efficient systems, energy-efficient appliances, insulation, energy-efficient doors and windows, and other elements that conserve resources. | Energy                        |
| Policy OSC-8.7   | The City will seek regional, state, and federal funding for energy efficiency improvements in existing buildings and the public realm.   | Energy                        |
| Policy OSC-8.8   | The City will encourage the installation and use of active solar systems to reduce electricity use from the grid.  | Energy                        |
| Policy OSC-8.9   | The City will conduct energy efficiency audits of all City-owned buildings to identify efficiency improvements.  | Energy                        |
| Policy OSC-8.10  | The City will consider the installation of renewable energy systems on City buildings and properties and transition the City's fleet to hybrid vehicles.   | Energy                        |
| Policy OSC-8.11  | The City will explore the viability of LED streetlights to reduce energy consumption and provide more reliable and constant illumination.  | Energy                        |
| Policy OSC-8.12  | The City will provide City staff training and public outreach on methods to reduce energy consumption and available incentives for energy efficiency measures.   | Energy                        |

The 2035 General Plan policies are implemented, in part, through development of the City's Draft Climate Action Plan, which addresses GHG emissions associated with energy use, water and wastewater, and solid waste. The Draft Climate Action Plan reduction measures have been demonstrated to reduce GHG emissions at a level that is consistent with, and supportive of the State of California's legislative emissions mandate embodied in AB 32. The reduction measures identified in the Draft Climate Action Plan illustrate how the City can meet the 2020 GHG reduction target and put the City on a trajectory towards longer-term reduction targets. While the Draft Climate Action Plan outlines proactive measures to which the City has committed, compliance with the body of policy listed in this section would also serve to reduce GHG emissions through buildout of the 2035 General Plan. Please see the Draft Climate Action Plan, on file with the City for more details.

## Conclusion

Implementation of the policies summarized in Table 3.5-2 that are designed to reduce GHG emissions and the City's Draft Climate Action Plan reduction measures would promote consistency with the mandates of AB 32 (i.e., reduce statewide GHG emissions to 1990 levels by 2020). Many of the City's policies would have significant and positive impacts on VMT reduction, which translates to large reductions in GHG emissions, while some will make a smaller contribution. For example, policies focused on land use, community design, and non-automobile transportation facilities that would reduce VMT would have a relatively greater impact on reducing GHG emissions compared to policies focused on water, wastewater, or other sectors that are not as large of a source of GHG emissions relative to VMT.

The City recognizes in the 2035 General Plan that transportation is the largest source of GHGs in Suisun City and California, and that land use and transportation planning to reduce vehicular travel is needed to achieve GHG reduction goals, especially since, given the predominance of transportation as a source of GHG emissions, improvements in building energy efficiency and other GHG emissions sectors can be overwhelmed by increases in VMT. The City also recognizes that effectiveness of a local GHG reduction program is contingent on future

development patterns and transportation systems that reduce emissions from the transportation sector. The City also recognizes that it does not have control over vehicle emissions technology or fuel economy standards, which are factors in calculating GHG emissions from the transportation sector. The City does not regulate energy generation, renewable energy targets, or other components of electricity related emissions. However, the City can exercise substantial influence on VMT through its land use entitlement authority. Through land use entitlement authority, the City can have a great influence on development patterns, community design, transportation facilities planning, and other factors that closely related to VMT. Land use and transportation strategies to reduce VMT and GHGs are a primary focus of the 2035 General Plan.

As demonstrated in this section, with buildout of the 2035 General Plan, the City's GHG emissions rate would be consistent with that which is needed statewide to achieve California's 2020 GHG target established under AB 32. However, the General Plan would build out after 2020 and in order to meet future GHG reduction targets, emissions rates may need to be further reduced. The 2035 General Plan includes a program to monitor and reduce GHG emissions associated with buildout of the 2035 General Plan:

**Program PHS-4.1. Greenhouse Gas Reduction Program.** The City will seek funding to maintain a GHG reduction program. The reduction program will address sources attributable to land uses operating within Suisun City at General Plan buildout. The City will address the following in its GHG reduction program:

Quantified estimates of GHG emissions attributable to development within Suisun City, along with population and employment estimates;

Emissions reduction target or GHG efficiency target that is consistent with, and supportive of the legislative mandate embodied in AB 32 and applicable efficiency-based targets for years after 2020;

Reduction measures, performance standards, incentives, and/or verifiable offsets that would collectively achieve the specified emissions reduction target or GHG efficiency target and could apply to both existing and new development; and

A monitoring mechanism to consider changes to the GHG reduction plan, as necessary, to ensure progress toward the specified target.

The City will participate in and support relevant regional GHG reduction programming to the extent that these efforts are consistent with the 2035 General Plan and to the extent that funding is available.

The City has developed and published a Draft Climate Action Plan. Please see Appendix G for details.

The General Plan has identified the need to provide the City's fair share of GHG emissions reductions associated with buildout of the 2035 General Plan. The performance standard used for this program references applicable emissions reductions targets that would apply to the period after 2020. Currently, the best method for examining emissions rates at buildout of the 2035 General Plan would be to use the AB 32 reduction target for 2020 and Executive Order S-3-05, which calls for emissions reductions of 80% below the 1990 level by 2050. The performance standard can be calculated by extrapolating the per-service population 2020 AB 32 emissions level and the per-service population 2050 S-3-05 emissions level to the buildout year. The performance standard for a 2035 buildout is currently estimated to be 2.4 MT CO<sub>2</sub>e per year, but this estimate is subject to revision in the future with updated statewide demographic and economic forecasts.

Implementation of the General Plan would be consistent with the state's emission reduction targets. By implementing the large number of policies where GHG emissions reductions are a primary outcome or a co-benefit, and by pursuing a GHG reduction program consistent with applicable guidelines, the 2035 General Plan would accommodate growth in a manner that would not hinder the state's ability to achieve its "fair share" of GHG reduction targets adopted for the purpose of preventing dangerous climate change.

Because the 2035 General Plan would generate GHG emissions per service population at a rate that is consistent with that needed at the state level to achieve the AB 32 target, and because the City has developed a GHG reduction program consistent with applicable reduction targets for future years, the impact is considered **less than cumulatively considerable**.

#### Mitigation Measure

No mitigation is required.

**IMPACT 3.5-2** *Impacts of Climate Change on Suisun City. Climate change is expected to result in a variety of effects that could potentially impact Suisun City: changes to terrestrial and aquatic ecosystems; increased energy demand; decreased water supply; increased risk of flooding; and increased frequency and intensity of wildfire. Substantial negative effects on residents, resources, structures, and the economy could result. This impact would be **potentially significant**.*

The 2035 General Plan would result in the release of GHGs into the atmosphere. As discussed previously in this chapter, human-induced increases in GHG concentrations in the atmosphere has led to increased global average temperatures (global warming) through the intensification of the greenhouse effect, and associated changes in local, regional, and global average climatic conditions.

Although there is a strong scientific consensus that global climate change is occurring and has been influenced by human activity, there is less certainty as to the timing, severity, and potential consequences of the climate phenomena. Climate change is likely to be perceived as more subtle through 2030, with more severe impacts occurring in the latter part of this century. Scientists have identified several ways in which global climate change could alter the physical environment in California (IPCC, 2013, CEC, 2006b, and DWR, 2006a). These include (California Energy Commission 2014):

- ▶ Increase in average temperature, number extreme heat days (daytime peak temperature 97 degrees or more), and duration of heat waves (three or more days of extreme heat in a row), with a projected increase in the average annual number of extreme heat days from 4 to 25 or more by 2100;
- ▶ modifications to the timing, variability, and amount of rain, with increased variability of multi-year droughts and extreme storm events, ;
- ▶ changes in the timing and amount of runoff;
- ▶ reduced water supply;
- ▶ deterioration of water quality; and

- ▶ elevated sea level and increased frequency of extreme storm events that result in a greater proportion of the City's planning area vulnerable to 100-year floods and storm surge.

The changes listed above may translate into a variety of other issues and concerns that may affect Suisun City, such as, but not limited to:

- ▶ changes in the composition, health, and distribution of terrestrial and aquatic ecosystems, particularly associated with increased saltwater intrusion in freshwater areas;
- ▶ reduced hydroelectric energy production caused by changes in the timing and volume of runoff;
- ▶ increase in vector borne diseases;
- ▶ increased energy demand associated with increased temperatures;
- ▶ water supply conflict;
- ▶ increased risk of flooding and wildfire associated with changes to precipitation patterns; and,
- ▶ inundation of low lying areas associated with rising sea levels.

The potential for increased development in Suisun City would result in the siting of more receptors in areas sensitive to certain impacts, such as flood and wildfire hazards, and water quality and availability issues. Policies identified throughout the various elements of the 2035 General Plan are designed to avoid siting receptors in areas that would be subject to foreseeable detrimental impacts of climate change.

In addition, the General Plan Land Use and Open Space Diagrams supports aspects of impact avoidance and adaptation. For example, proposed development is minimized to the extent feasible along watercourses and low-lying areas. The land use designations in the 2035 General Plan would minimize conflicts or incompatibilities associated with foreseeable climate change impacts of the next 90 years. However, land use conflicts may still occur. Thus, the foreseeable impacts of climate change are **potentially significant**.

Due to the uncertainty in timing and extent of projected impacts to the physical environment as a result of climate change, it remains uncertain whether significant impacts have been substantially avoided or abated under a future condition, which is not fully knowable.

### **Relevant Policies and Programs of the 2035 General Plan**

The 2035 General Plan Update contains many goals, policies, and programs that have the potential to aid the City's adaptation to climate change (reducing energy demand, reducing flood potential, decreasing wildfire risk, ensuring adequate water supply, increasing water conservation, preserving important habitat and open space areas). These policies and actions are included throughout the 2035 General Plan. Relevant policies include:

- ▶ **Policy PHS-4.6.** The City will use the Local Hazard Mitigation Plan and other opportunities for long-term disaster recovery to include adaptation strategies associated with the possible impacts of climate change, most notably the potential for sea level rise. Possible strategies include, but are not limited to, building moratoriums in potentially affected areas, the construction of raised foundations in new development, and the construction of levees and dikes to prevent increased sea levels from affecting the City.

- **Policy PHS-4.7.** The City will support Solano County’s Sea Level Rise Strategic Program, as feasible.

In addition, the City has developed a program to more specifically implement adaptation strategies:

**Program PHS-4.2. Coordinate with Regional Adaptation Strategy.** The City will seek funding to collaborate with other local, regional, and state agencies to assess local vulnerability to climate change and develop strategies to adapt to the effects of climate change and promote the other objectives of the 2035 General Plan.

The vulnerability assessment would generally include identification of the primary climate change effects; the local sensitivity to these effects; level of community resiliency to climate change effects; and estimates of the timing of climate change effects on Suisun City. Development of an adaptation strategy would generally be anticipated to include a prioritization of adaptive needs based on the vulnerability assessment; identification of strategies for priority adaptation needs; consider potential strategies relative to costs, benefits, co-benefits, feasibility, and other relevant local factors; and phasing and funding approach for the strategies. The City anticipates that adaptation strategies – particularly those that are designed to protect existing structures, facilities, and infrastructure – would require regional cooperation and funding.

The City will prioritize those areas in the City with properties that contain development of special value and that merit special protection and identify areas where hazardous substances could be released into the environment as a result of sea level rise. The City will investigate and recommend sea level rise management actions, such as the construction of levees or sea walls to protect areas that merit special protection, or plans to relocate buildings and infrastructure that could become inundated. The City will update land use designations and development regulations, as appropriate, in order to protect public safety, welfare, and health. The City will adopt construction standards that account for flood hazards for public roads and bridges used as evacuation routes.

## Conclusion

Implementation of the policies and programs in the 2035 General Plan would reduce the extent and severity of climate change–associated impacts by proactively planning for changes in climate and conditions and providing methods for adapting to these changes. Projections for the above discussed potential impacts of climate change on Suisun City occur over a time span beyond buildout of the 2035 General Plan. The 2035 General Plan proposes feasible mitigation to respond and adapt to foreseeable impacts of climate change in the form of General Plan policies and programs, but the efficacy of the City’s policy approach for dealing with the local effects of climate change is unknowable at this time. The impact is **potentially significant**.

## Mitigation Measure

There is no additional feasible mitigation beyond implementation of the policies and programs in the 2035 General Plan to reduce the extent and severity of climate change–associated impacts. For the purposes of this EIR, the impact is considered **significant and unavoidable**.

# 3.6 ENERGY

## 3.6.1 IMPACTS AND MITIGATION MEASURES

### METHODOLOGY

This analysis focuses on energy conservation and the need for new or expanded energy-related infrastructure that could potentially lead to environmental effects. Future energy demand was calculated based on anticipated land use change under the 2035 General Plan.

### THRESHOLDS OF SIGNIFICANCE

Appendix F of the State CEQA Guidelines provides guidance for assessing impacts related to energy supplies, focusing on the goal of conserving energy by ensuring that projects use energy wisely and efficiently. An energy impact is considered significant if implementation of the 2035 General Plan would:

- ▶ develop land uses and patterns that cause wasteful, inefficient, and unnecessary consumption of energy or
- ▶ result in the need for new systems or substantial alteration to electrical, natural gas, or communications infrastructure that could cause significant adverse environmental impact/s.

### IMPACTS AND MITIGATION MEASURES

**IMPACT 3.6-1** *Energy Efficiency Impacts. Land use change accommodated under the 2035 General Plan would increase local energy demand and would require that additional energy resources be delivered to residents and business within the Planning Area. Implementation of policies and programs in the 2035 General Plan, compliance with Building Energy Efficiency Standards (Title 24 of the California Code of Regulations) and other applicable regulations, and incorporation of strategies that reduce vehicular travel demand would ensure the Planning Area is developed using efficient land use and circulation patterns and energy conservation methods, thereby preventing the wasteful, inefficient, excessive, and unnecessary consumption of energy. This impact is considered **less than significant**.*

Implementation of the 2035 General Plan would accommodate the development of up to 1,800 housing units and 4.2 million square feet of retail, commercial, and light industrial uses, all of which would increase Suisun City’s energy consumption and require that additional energy resources be delivered to the City by PG&E. As shown on Table 3.6-1, full buildout of the 2035 General Plan would result in an estimated increase of approximately 40 million kWh for electricity and 490,000 therms of natural gas each year.

| Table 3.6-1<br>New Electrical and Natural Gas Demand from 2035 General Plan |                              |                             |
|---|------------------------------|-----------------------------|
| Land Use  | Electrical Demand (kWh/year) | Natural Gas Demand (Therms) |
| Residential   | 1,977,953                    | 201,848                     |
| Commercial Services/Retail/Light Industrial/<br>Employment                  | 38,006,351                   | 289,751                     |
| <b>Total</b>  | <b>39,984,304</b>            | <b>491,599</b>              |
| Notes: kWh = kilowatt hours   |                              |                             |

The City's policies and programs in the 2035 General Plan, along with state code requirements (California Code of Regulations, Title 24, Building Energy Efficiency Standards and CalGreen Code) will improve energy efficiency in new development. These policies and standards would ensure that new development projects use design features, building materials, and building practices that would increase the energy efficiency of new structures developed within the City and the Planning Area.

### **Relevant Policies and Programs of the 2035 General Plan**

The City has addressed energy use in buildings and other structures by promoting energy conservation through various General Plan policies. For example, the City will require new developments to use different techniques to improve energy efficiency, including building/site orientation and construction, articulated windows, roof overhangs, appropriate building and insulation materials and techniques, and other architectural features that improve passive interior climate control. The City will encourage landscaping methods, materials, and designs that promote energy conservation and will preserve existing trees and plant new trees along streetscapes to provide shade. The City will encourage the retrofitting of existing buildings with energy efficient systems, energy-efficient appliances, insulation, energy-efficient doors and windows, and other elements that conserve resources. The City will seek regional, state, and federal funding for energy efficiency improvements in existing buildings and the public realm and encourage the installation and use of active solar systems to reduce electricity use. Please refer to the Open Space and Conservation Element for more details.

Transportation is, by far, the largest energy consuming sector in California, accounting for 40 to 54% of all energy use in the state (U.S. Energy Information Administration 2010 and Lawrence Berkeley National Laboratory 2005). The location, density, mix of land uses, and quality of the multi-modal transportation system is directly related to the amount of travel and transportation-related energy demands. There are many feasible and commonly used land use and transportation planning strategies that reduce vehicular travel demand and therefore increase energy efficiency. Several of these strategies are incorporated into the Land Use, Transportation, and Community Character and Design Elements of the 2035 General Plan, including:

- ▶ More compact development patterns and mixing of land uses that place residences and destinations closer to one another;
- ▶ Transit-oriented development surrounding the train station;
- ▶ High-quality pedestrian and bicycle connections between destinations;
- ▶ Development patterns and transportation infrastructure that together provide citizens and businesses with provide more energy efficient travel choices; and
- ▶ A bicycle and pedestrian network that connects neighborhoods and commercial centers to each other and to other destinations around town.

In addition, the 2035 General Plan provides overarching policy guidance that would help the City to better match the number and types of jobs available in the community with the skills of Suisun City's workforce and develop housing, shopping, services, and employment opportunities through reinvestment and infill development throughout the City and development of vacant and underutilized properties. This would enable both current and future residents to work and shop within the City, whereas at present, many residents drive to employment and

commercial centers in other cities. Since transportation is the most important sector for energy use in California and a dominant sector for energy demand in Suisun City, the City's strategies intended to reduce travel demand and offer a more practical range of non-vehicular travel options will be critical in improving local energy efficiency.

The 2035 General Plan Economic Development Element includes policies to facilitate business development and attraction, improve jobs-housing balance, facilitate economic and fiscal sustainability, encourage redevelopment and revitalization, increase the City's share of destination tourism activity, and take advantage of the key remaining areas for development in the Planning Area for economic development. Please refer to the Economic Development Element for more detail. The policies included in the City's Economic Development Element will be implemented in more detail and updated more frequently as a part of the City's Economic Development Strategy.

The City's Draft Climate Action Plan includes several reduction measures related to improving the community's energy efficiency between present and 2035, while also reducing greenhouse gas (GHG) emissions. Land use and transportation measures from the Draft Climate Action Plan also occur in the form of General Plan policy. The Draft Climate Action Plan includes measures addressing building energy efficiency, financing for energy efficiency and renewable energy improvements, lighting, renewable energy generation, water conservation, and solid waste diversion. Many of these measures are related to, or support statewide regulations related to energy efficiency.

### **Existing Regulations to Improve Energy Efficiency**

Individual development projects proposed under the 2035 General Plan would be required to comply with the current energy performance standards found in Title 24 of the California Code of Regulations, resulting in reductions in energy demand. Title 24 was promulgated by the CEC in 1978 to reduce California's energy consumption. These new energy efficiency standards were developed in response to the State's energy crisis, as well as AB 970 (Chapter 329, Statutes of 2000), the California Energy and Reliability Act of 2000. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods.

The 2013 California Green Building Standards Code, California Code of Regulations, Title 24, Part 11, which became effective on January 1<sup>st</sup>, 2014, include minimum efficiency standards are given for a variety of building elements, including appliances; water and space heating and cooling equipment; and insulation for doors, pipes, walls and ceilings. The code was developed to enhance the design and construction of buildings and sustainable construction practices through planning and design, energy efficiency, water efficiency and conservation, material conservation and resource efficiency, and environmental air quality. The code emphasizes saving energy at peak periods and seasons. This code is intended to reduce indoor potable water demand by 20%, to reduce landscape water usage by 50%, and to reduce construction waste by 50%. It also requires separate water meters for nonresidential buildings' indoor and outdoor water use, with a requirement for moisture-sensing irrigation systems for larger landscape projects, and mandatory inspections of energy systems (e.g., heat furnace, air conditioner, and mechanical equipment) for nonresidential buildings over 10,000 square feet to ensure that all are working at their maximum capacity and according to their design efficiencies (California Building Standards Commission 2013, Sections 4.201 and 5.201). The code was developed to enhance the design and construction of buildings and sustainable construction practices through planning and design, energy efficiency, water efficiency

and conservation, material conservation and resource efficiency, and environmental air quality. It is the intent of this code to encourage green buildings to achieve more than a 15% reduction in energy usage when compared to existing standards.

Implementation of the state standards is expected to reduce the growth in electricity use by 555.5 GWh per year and reduce the growth in natural gas use by 7.04 MM therms per year statewide. The energy savings attributable to new single-family and multi-family residential buildings is 27.8 GWh per year of electricity savings and 0.94 MM therms per year of natural gas savings. The energy savings attributable to new non-residential buildings is 272.3 GWh per year of electricity savings and 3.7 MM therms per year of natural gas savings. Alterations to existing non-residential building are a substantial part of the energy savings. These savings result from retrofit insulation requirements for existing roofs and the requirement that renovated lighting systems meet the new requirements. The energy savings attributable to alterations to existing non-residential buildings is 255.4 GWh per year of electricity savings and 2.4 MM therms per year of natural gas savings (CEC 2013).

**Conclusion**

Implementation of policies in the 2035 General Plan and Draft Climate Action Plan reduction measures, compliance with Building Energy Efficiency Standards (Title 24 of the California Code of Regulations) and other applicable regulations, and incorporation of strategies that reduce vehicular travel demand would ensure the Planning Area is developed using efficient land use and circulation patterns and energy conservation methods, thereby preventing the wasteful, inefficient, excessive, and unnecessary consumption of energy. Therefore, this impact would be **less than significant**.

**Mitigation Measure**

No mitigation is required.

|               |  |
|---------------|--|
| <b>IMPACT</b> | <b>Increased Energy Demands and Need for Energy-Related Infrastructure.</b> <i>Implementation of the 2035 General Plan would increase demand for electrical and natural gas supplies and require the expansion and extension of utility infrastructure to deliver services to individual land uses within Suisun City. The electrical and natural gas supplies and size, location, and types of facilities required to serve individual development projects proposed pursuant to the General Plan is not known at this time. The City has, therefore, conservatively determined that these impacts would be <b>potentially significant</b>.</i> |
| <b>3.6-2</b>  |  |

Land use change accommodated under the 2035 General Plan would increase the local demand for electrical and natural gas supplies and require the expansion and extension of utility infrastructure to deliver services to individual land uses within Suisun City. As discussed above, implementation of the 2035 General Plan and Draft Climate Action Plan would improve energy efficiency in new development and would ensure that new development projects use design features, building materials, and building practices that would increase the energy efficiency of new structures developed within the City and the Planning Area, thereby reducing the demand for electricity and natural gas supplies.

PG&E provides electricity and natural gas to the City through electric transmission and distribution lines and natural gas distribution pipelines. PG&E would be involved with new developments that are proposed to construct additional electrical and natural gas infrastructure, as necessary, to meet demand. PG&E would be responsible for upgrading existing electrical and natural gas distribution systems or constructing new distribution systems to meet

the demands of individual projects. Electrical infrastructure could include extension of existing distribution lines; upgrades to substations; and construction of new distribution lines, substations, and transformers. Similarly, PG&E could extend existing natural gas infrastructure using undergrounded pipelines, upgrade natural gas regulator stations, and construct new transmission mains and natural gas regulator stations to serve individual development projects. PG&E would conduct a separate environmental analysis to analyze specific impacts and identify any required mitigation measures for construction and operation of their electrical and natural gas distribution systems.

New residential projects are typically required to construct self-contained distributions systems that connect to the existing electrical and natural gas systems. Commercial and infill development also typically connect to the existing electrical and natural gas systems. Individual development projects proposed pursuant to the 2035 General Plan would be required to coordinate with, and meet the requirements of PG&E and applicable requirements of the California Building Standards Code regarding the location of infrastructure. Collaboration between future project applicants within the Planning Area, the City, and PG&E would continue throughout the design process for individual projects, as well as throughout buildout the 2035 General Plan.

Indirect physical impacts associated with construction and operation of new electrical and natural gas infrastructure are evaluated at a program level throughout this EIR since these facilities are considered to be part of the land uses and development consistent with the 2035 General Plan. Specific indirect impacts are addressed in each technical section of this EIR, as appropriate. These impacts could include disturbance of habitat and special-status plant and animal species; disturbance of archaeological and paleontological sites; temporary noise and or ground vibration that would exceed ambient noise levels; greenhouse gas emissions from construction vehicles; temporary, short-term construction-related erosion; increased stormwater discharges of suspended solids, increased turbidity, and potential mobilization of other pollutants from project construction sites; and construction on areas of potential ground failure.

### **Relevant Policies and Programs of the 2035 General Plan**

The 2035 General Plan includes policies and programs that would reduce the physical impacts associated with the construction and operation of new electrical and natural gas infrastructure. The City will require public facilities constructed to serve new development to avoid substantial impacts to biological resources, including special-status species, riparian areas, and wetlands, to the greatest extent feasible, and known cultural, archaeological, and paleontological resources, wherever feasible. The City will also require new development to implement all feasible noise mitigation to reduce construction and other short-term noise impacts as a condition of approval; implement applicable emission control measures recommended by the Bay Area Air Quality Management District for construction, grading, excavation, and demolition; meet the requirements of the National Pollutant Discharge Elimination System permit, if a permit is required; implement any identified best management practices during construction to mitigate impacts from construction work; and control debris, sediment, and the rate and dispersal of runoff before drainage into watercourses through the incorporation of erosion control measures. Please refer to the Open Space and Conservation Element for more details.

In addition, federal, State, and local regulations and policies would be implemented and would ensure that sufficient energy supplies are available to serve the needs of the City. The California Public Utilities Commission (CPUC) Decision 95-08-038 contains the rules for the planning and construction of new transmission facilities, distribution facilities, and substations. The decision requires permits for the construction of certain power line

facilities or substations if the voltages would exceed 50 kV or if the substation would require the acquisition of land or an increase in voltage rating above 50 kV. Distribution lines and substations with voltages less than 50 kV do not need to comply with this decision. However, the utility must obtain any nondiscretionary local permits required for the construction and operation of these projects. CEQA compliance is required for construction of facilities constructed in accordance with the decision.

- ▶ **Policy OSC-1.8:** Roads, water lines, sewer lines, drainage facilities, and other public facilities constructed to serve development shall be located and designed to avoid substantial impacts to stream courses, associated riparian areas, and wetlands, to the greatest practical extent.
- ▶ **Policy OSC-5.2:** New developments shall be designed to avoid adverse impacts to any known archaeological and paleontological resources, wherever feasible.
- ▶ **Program PHS-1.5:** The City will require new developments proposing construction adjacent to existing noise-sensitive uses or close enough to noise-sensitive uses that relevant performance standards could be exceeded to incorporate feasible mitigation to reduce construction noise exposure. This may include additional limits on the days and times of day when construction can occur, re-routing construction equipment away from adjacent noise-sensitive uses, locating noisy construction equipment away from noise-sensitive uses, shrouding or shielding impact tools, use of intake and exhaust mufflers and engine shrouds, construction of acoustic barriers (e.g., plywood, sound attenuation blankets), pre-drilling holes for placement of piles or non-impact pile driving where piles would be needed, and other feasible technologies or reduction measures necessary to achieve the City's relevant performance standards.
- ▶ **Program PHS-3.2:** The City will require new developments to incorporate applicable construction mitigation measures maintained by the BAAQMD to reduce potentially significant impacts. Basic Control Measures are designed to minimize fugitive PM dust and exhaust emissions from construction activities. Additional Control Measures may be required when impacts would be significant after application of Basic Control Measures.
- ▶ **Program PHS-5.1:** The City will review new developments for applicable requirements of the National Pollutant Discharge Elimination System (NPDES) permit. New developments must use best management practices (BMPs) during construction to mitigate impacts from construction work and during post construction to mitigate post-construction impacts to water quality. Long-term water quality impacts must be reduced using site design and source control measures to help keep pollutants out of stormwater. The City will encourage proactive measures that are a part of site planning and design that would reduce stormwater pollution as a priority over mitigation measures applied to projects after they are designed. Some of the many ways to reduce water quality impacts through site design include: reduce impervious surfaces; drain rooftop downspouts to lawns or other landscaping; and use landscaping as a storm drainage and treatment feature for paved surfaces.

## Conclusion

Although implementation of policies, programs, and standards in the 2035 General Plan would reduce impacts associated with increased demand for electricity and natural gas and related infrastructure, the electrical and natural gas supplies and size, location, and types of facilities required to serve individual development projects proposed pursuant to the General Plan is not known at this time. Technical sections of this EIR evaluate the effects of construction activities relative to specific environmental issue areas, such as biological resources, air quality, etc., at a programmatic level of detail, as is appropriate for a general plan. These sections comprehensively address direct impacts of 2035 General Plan implementation, as well as indirect effects related to changes needed to support General Plan implementation, such as the construction and operation of new energy facilities. The 2035 General Plan includes policies and programs, where necessary, to reduce or avoid impacts. The City's policies and programs referenced throughout this EIR would reduce impacts associated with construction and operation of needed energy facilities. By adhering to the policies proposed in the 2035 General Plan, as well as all applicable state and federal requirements pertaining to energy facilities construction and

operation, impacts associated with construction and operation of energy facilities to meet 2035 General Plan demands would be reduced. Despite mitigating policies and programs and the application of necessary mitigation measures, construction and operation of new or expanded energy production and delivery facilities may result in significant environmental effects. Therefore, the City has conservatively determined that these impacts would be **potentially significant**.

#### Mitigation Measure

No mitigation beyond compliance with State and federal regulations and incorporation of 2035 General Plan policies and actions is available. The City has included throughout the 2035 General Plan all feasible measures available to mitigate such impacts. The impact is considered **significant and unavoidable**.

## 3.7 GEOLOGY, SOILS, MINERALS, AND PALEONTOLOGICAL RESOURCES

### 3.7.1 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

#### METHODOLOGY

This analysis relies on published geologic literature and maps, Natural Resources Conservation Service (NRCS) soil survey data (“Web Soil Survey”), among other published sources. Impacts associated with geology, soils, and mineral resources that could result from construction and operational activities were evaluated qualitatively based on site conditions and expected construction practices. In its standard guidelines for assessment and mitigation of adverse impacts on paleontological resources, the Society of Vertebrate Paleontology (1995) established three categories of sensitivity for paleontological resources: high, low, and undetermined. Areas where fossils have been previously found are considered to have a high sensitivity and a high potential to produce fossils. Areas that are not sedimentary in origin and that have not been known to produce fossils in the past typically are considered to have low sensitivity. Areas that have not had any previous paleontological resource surveys or fossil finds are considered to be of undetermined sensitivity until surveys and mapping are performed to determine their sensitivity. After reconnaissance surveys, observation of exposed cuts, and possibly subsurface testing, a qualified paleontologist can determine whether the area should be categorized as having high or low sensitivity.

#### THRESHOLDS OF SIGNIFICANCE

##### Geology, Soils, and Minerals

- ▶ Expose people, property, or structures to potential substantial adverse impacts, including the risk of loss, injury, or death involving:
  - rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault;<sup>1</sup>
  - strong seismic ground shaking;
  - seismic-related ground failure, including liquefaction; or
  - landslides;
- ▶ result in substantial soil erosion or the loss of topsoil;
- ▶ be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse;
- ▶ be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property;<sup>2</sup>

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<sup>1</sup> An exhibit documenting Alquist-Priolo Earthquake Fault Zoning is incorporated into Exhibit GEO-8 in the Geology and Soils Background Report.

- ▶ have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water; or
- ▶ result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state or a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan.

## **Paleontological Resources**

Based on the environmental checklist in Appendix G of the State CEQA Guidelines, a project would have a significant impact on paleontological resources if it would directly or indirectly destroy a unique paleontological resource or site. A “unique paleontological resource or site” is one that is considered significant under the professional paleontological standards described below.

An individual vertebrate fossil specimen may be considered unique or significant if it is identifiable and well preserved, and it meets one of the following criteria:

- ▶ a type specimen (i.e., the individual from which a species or subspecies has been described);
- ▶ a member of a rare species;
- ▶ a species that is part of a diverse assemblage (i.e., a site where more than one fossil has been discovered) wherein other species are also identifiable, and important information regarding life history of individuals can be drawn;
- ▶ a skeletal element different from, or a specimen more complete than, those now available for its species; or
- ▶ a complete specimen (i.e., all or substantially all of the entire skeleton is present).

The value or importance of different fossil groups varies depending on the age and depositional environment of the rock unit that contains the fossils, their rarity, the extent to which they have already been identified and documented, and the ability to recover similar materials under more controlled conditions (such as for a research project). Marine invertebrates are generally common; the fossil record is well developed and well documented, and they would generally not be considered a unique paleontological resource. Identifiable vertebrate marine and terrestrial fossils are generally considered scientifically important because they are relatively rare.

## **ISSUES NOT ADDRESSED FURTHER IN THIS EIR**

**Loss of Availability of Mineral Resources**— There are no areas of known mineral resources within the Planning Area (i.e., areas that have been classified as MRZ-2 by the California Division of Mines and Geology). Therefore, implementation of the land use changes consistent with the 2035 General Plan would have no impact related to the loss of availability of mineral resources, and this impact is not addressed further in this EIR.

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<sup>2</sup> This guidance is now a part of the California building codes. However, this historic reference to the “Uniform Building Code” is correct.

**Landslide Hazards**—Slopes within and immediately adjacent to the Planning Area are nearly flat, ranging from 0-4%. Therefore, landslides would not pose a hazard for the Planning Area, and this impact is not addressed further in this EIR.

## IMPACT ANALYSIS

**IMPACT 3.7-1**    **Seismic Hazards Related to Surface Fault Rupture, Strong Seismic Ground Shaking, and Liquefaction.** *Development and land use changes consistent with the 2035 General Plan could subject people and structures to hazards associated with surface fault rupture (along the Vaca-Kirby Hills Fault), strong seismic ground shaking, and liquefaction. Implementation of the policies and programs in the 2035 General Plan, combined with other relevant regulations and programs, would reduce this impact to a less-than-significant level.*

The western edge of the Planning Area is located approximately 3 miles from the Cordelia Fault and approximately 3.5 miles from the Green Valley Fault. The trace of the Cordelia Fault trends northeastward across Interstate 80 through the unincorporated community of Cordelia and into the adjacent hills. The Green Valley Fault can be traced from Suisun Bay northward across Interstate 80 (just west of Cordelia) and into the Green Valley. Both the Cordelia Fault and the Green Valley Fault have been designated as active faults by the California Geological Survey (CGS), and are included in Special Studies Zones under the Alquist-Priolo Earthquake Fault Zoning Act because the potential for surface fault rupture is considered to be high (CGS 2010).

The Kirby Hills Fault passes through the eastern portion of the Planning Area. The Kirby Hills Fault is active as evidenced by numerous microearthquakes as large as magnitude 3.7 that have been associated with the fault over the past 32 years (Myer et al. 2010). The Kirby Hills Fault is not included in a Special Studies Zone under the Alquist-Priolo Earthquake Fault Zoning Act. However, any fault (particularly those with evidence of activity during the Holocene epoch) may result in surface rupture.

Ground shaking, motion that occurs as a result of energy released during faulting, could potentially result in the damage or collapse of buildings and other structures in the Planning Area as a result of activity along the Green Valley, Cordelia, or Kirby Hills Faults, in addition to other active faults in the region, such as the Rodgers Creek and the San Andreas. Damage from strong seismic ground shaking is most likely to occur in areas where older buildings that consist of unreinforced masonry are located.

Soil liquefaction occurs when ground shaking from an earthquake causes a sediment layer saturated with groundwater to lose strength and take on the characteristics of a fluid, thus becoming similar to quicksand. The California Building Standards Code (CBC) requires a site-specific evaluation of the liquefaction hazard; however, general areas subject to liquefaction hazard can be determined based on data available from the Association of Bay Area Governments (2011). The western and southern portions of the Planning Area are located in areas of moderate to very high liquefaction potential.

## Existing Regulations to Reduce Seismic Hazards

A fault is a zone of deformation in the crust of the earth along which rocks on one side have moved relative to those on the other side. Most faults are the result of repeated displacements over a period of time. A fault trace is the surface expression of an area of definitive fault displacement. If any surface displacement in excess of an inch or two along a fault trace were to occur beneath a building, transportation facility, main utility line, aqueduct, etc.,

the effects could be catastrophic. The Alquist-Priolo Earthquake Fault Zoning Act (California Public Resources Code [PRC] Sections 2621–2630) was passed in 1972 to reduce the hazard of surface faulting to structures designed for human occupancy. The main purpose of the law is to prevent the construction of buildings used for human occupancy on the surface trace of active faults.

The Seismic Hazards Mapping Act of 1990 (California PRC Sections 2690–2699.6) addresses earthquake hazards from nonsurface fault rupture, including liquefaction and seismically induced landslides. The act established a mapping program for areas that have the potential for liquefaction, landslide, strong ground shaking, or other earthquake and geologic hazards. The act also specifies that the lead agency for a project may withhold development permits until geologic or soils investigations are conducted for specific sites and mitigation measures are incorporated into plans to reduce hazards associated with seismicity and unstable soils.

The state earthquake protection law (California Health and Safety Code Section 19100 et seq.) requires that structures be designed to resist stresses produced by lateral forces caused by wind and earthquakes. The 2010 CBC, which has been adopted by the City, requires an evaluation of seismic design that falls into Categories A through F (where F requires the most earthquake-resistant design) for structures designed for a project site. The CBC philosophy focuses on “collapse prevention,” meaning that structures are designed for prevention of collapse for the maximum level of ground shaking that could reasonably be expected to occur at a site. Chapter 16 of the CBC specifies exactly how each seismic design category is to be determined on a site-specific basis through the site-specific soil characteristics and proximity to potential seismic hazards.

Chapter 18 of the CBC regulates the excavation of foundations and retaining walls. This chapter regulates the preparation of a preliminary soil report, engineering geologic report, geotechnical report, and supplemental ground-response report. Chapter 18 also regulates analysis of expansive soils and the determination of the depth to groundwater table. For Seismic Design Category C, Chapter 18 requires analysis of slope instability, liquefaction, and surface rupture attributable to faulting or lateral spreading. For Seismic Design Categories D, E, and F, Chapter 18 requires these same analyses plus an evaluation of lateral pressures on basement and retaining walls, liquefaction and soil strength loss, and lateral movement or reduction in foundation soil-bearing capacity. It also requires addressing mitigation measures to be considered in structural design. Mitigation measures may include ground stabilization, selection of appropriate foundation type and depths, selection of appropriate structural systems to accommodate anticipated displacements, or any combination of these measures, depending on the specific site context and the type of construction proposed. The potential for liquefaction and soil strength loss must be evaluated for site-specific peak ground acceleration magnitudes and source characteristics consistent with the design earthquake ground motions. Peak ground acceleration must be determined from a site-specific study, the contents of which are specified in CBC Chapter 18.

Finally, Appendix Chapter J of the 2010 CBC regulates grading activities, including drainage and erosion control and construction on unstable soils, such as expansive soils and areas subject to liquefaction. Impacts related to seismic hazards in the Planning Area from surface fault rupture, strong seismic ground shaking, and liquefaction would be reduced through compliance with existing regulations to a **less-than-significant** level.

### **Relevant Policies and Programs of the 2035 General Plan**

In addition to the above described existing regulations that would reduce impacts associated with seismic risks for proposed developments, the City has prepared policies and programs that would help to reduce impacts.

- ▶ **Policy PHS-14.1:** The City will implement state and local building code requirements, including those related to structural requirements and seismic safety criteria in order to reduce risks associated with seismic events and unstable and expansive soils.
- ▶ **Policy PHS-14.2:** The City will require the preparation of a geotechnical site investigation for new development projects. The project will be required to implement any recommendations made in the investigation to reduce the potential for ground failure due to geologic or soil conditions.
- ▶ **Policy PHS-14.3:** The City will require new developments that could be adversely affected by geological and/or soil conditions to include project features that minimize these risks.
- ▶ **Policy PHS-14.4:** The City will discourage the development of critical infrastructure within 50 feet of the Vaca-Kirby Hills Fault trace.
- ▶ **Policy PHS-14.5:** Buildings intended for human habitation shall be set back a minimum distance of 50 feet from the Vaca-Kirby Hills Fault trace.
- ▶ **Program PHS-14.1:** Geotechnical Investigations. The City will require geotechnical evaluation and recommendations before development or redevelopment activities. Such evaluations will be required to focus on potential hazards related to liquefaction, erosion, subsidence, seismic activity, and other relevant geologic hazards and soil conditions for development. New development would be required to incorporate project features that avoid or minimize the identified hazards to the satisfaction of the City.
- ▶ **Program PHS-14.3:** Safe Placement of Potentially Hazardous Infrastructure. Except where preempted by State or federal law, no new public or private power, water, sewer, or gas lines will be permitted to cross identified ground failure areas, including the Vaca-Kirby Hills Fault trace, unless reasonable alternative routes are not available or the facility is designed to ensure rapid shut-off, minimum disruption of service, and minimum adverse impact on adjacent and surrounding areas in the event of seismic-induced ground failure. Lines will also be made accessible for routine maintenance and emergency repairs to minimize the potential for extended service interruption.
- ▶ **Policy PHS-15.1:** The City will use the Local Hazard Mitigation Plan to prepare for immediate response, adaptation, long-term recovery, and planning for future community resiliency in the event of a disaster.
- ▶ **Policy PHS-15.2:** The City will review development and redevelopment projects, plans, and public investment decisions to ensure consistency with the Local Hazard Mitigation Plan.
- ▶ **Policy PHS-15.3:** The City will provide public access to emergency response procedures in such locations as City Hall, Suisun City Library, and public schools and will otherwise promote awareness of emergency response and evacuation plans.
- ▶ **Policy PHS-15.4:** The City's development and improvement standards will require a circulation system with multiple access points, adequate provision for emergency equipment access, and evacuation egress. New and redevelopment projects will be checked by the City to ensure proper emergency access is provided.

## Conclusion

With implementation of policies and programs in the 2035 General Plan, combined with current geologic and seismic laws, regulations, and policies, this impact is considered **less than significant** since site-specific geotechnical reports would be prepared to identify methods to reduce hazards from surface fault rupture, strong seismic ground shaking, and liquefaction for projects accommodated under the 2035 General Plan.

## Mitigation Measure

No mitigation is required.

**IMPACT 3.7-2** **Soil Erosion.** *Land use change accommodated under the 2035 General Plan would result in substantial grading, excavation, and movement of earth associated with site preparation activities. These activities would increase soil erosion, especially from wind and water, and the potential for siltation of local drainages. Implementation of the policies and programs in the 2035 General Plan, combined with other relevant regulations and programs, would reduce the potential for soil erosion to a **less-than-significant** level.*

Land use change accommodated under the 2035 General Plan would involve grading, excavation, and earth-moving activities associated with construction of infrastructure and building and road foundations. Although these activities would occur in soils that have a low erosion hazard (because of the relatively flat topography and the high soil clay content), construction would result in the temporary disturbance of soil and would expose disturbed areas to winter storm events. Rain of sufficient intensity could dislodge soil particles from the soil surface. If the storm is large enough to generate runoff, localized erosion could occur. In addition, soil disturbance during the summer as a result of construction activities could result in soil loss because of wind erosion.

## Existing Regulations to Reduce Erosion

Chapter 15.12 of the Suisun City Municipal Code addresses erosion and sediment control under the City Grading and Erosion Control Ordinance. Project applicants must obtain a grading permit that includes a site runoff control plan, which must include erosion and dust control measures. In addition, projects adjacent to any creek or the Suisun Marsh must demonstrate compliance with a specified suite of measures to control erosion that are listed in the ordinance.

The City addresses stormwater requirements for development projects through the *Fairfield-Suisun Urban Runoff Management Program* (FSURMP) (Cities of Fairfield and Suisun City 2006). Development projects in the City must comply with the NPDES permit issued to the FSURMP by the San Francisco Bay RWQCB. In order to reduce the transport of sediments and pollutants in stormwater, all projects must incorporate best management practices (BMPs) during construction activities. In addition, all projects must incorporate site design and source control measures during project operation. For those projects that consist of redevelopment, if more than 50% of the existing impervious surface area would be replaced or added, the entire project must be included in the site design, source control, and BMP requirements. The FSURMP requires that all projects implement a Stormwater Pollution Prevention Plan (SWPPP), including those projects that disturb less than 1 acre of land (although the SWPPP for such projects may be abbreviated). The SWPPP must include a site map and a description of construction activities, and must identify the BMPs that will be employed to prevent soil erosion and discharge of other construction-related pollutants.

Projects that disturb more than 1 acre of land must comply with the requirements in the SWRCB *General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities* (Order 2009-0009-Division of Water Quality). The SWRCB general permit contains a numeric, two-part, risk-based analysis process. It also identifies the need to address changes in the hydrograph, defined as hydrograph modification or hydromodification, which could result from urbanization of a watershed, and requires low impact development (LID) controls to more closely mimic the pre-developed hydrologic condition.

Impacts related to soil erosion would be reduced through compliance with existing regulations to a **less-than-significant** level.

### **Relevant Policies and Programs of the 2035 General Plan**

In addition to the above described existing regulations that would reduce impacts associated with erosion, the City has prepared policies and programs that would help to reduce impacts.

- ▶ **Program PHS-5.1: Stormwater Development Requirements.** The City will review new developments for applicable requirements of the National Pollutant Discharge Elimination System (NPDES) permit. New developments must use best management practices (BMPs) during construction to reduce water quality impacts from construction work and during project operation to mitigate post-construction impacts to water quality. Long-term operational water quality impacts must be reduced using site design and source control measures to help keep pollutants out of stormwater. The City will encourage proactive measures that are a part of site planning and design that would reduce stormwater pollution as a priority over mitigation measures applied to projects after they are designed. Some of the many ways to reduce water quality impacts through site design include: reduce impervious surfaces; drain rooftop downspouts to lawns or other landscaping; and use landscaping as a storm drainage and treatment feature for paved surfaces.
- ▶ **Policy PHS-5.3:** New development shall incorporate low impact development (LID) strategies, such as rain gardens, filter strips, swales, and other natural drainage strategies, to the greatest extent feasible, in order to reduce stormwater runoff levels, improve infiltration to replenish groundwater, reduce localized flooding, and reduce pollutants close to their source.
- ▶ **Policy OSC-1.3:** The City will protect and preserve natural watercourses and drainage channels, particularly along open space areas, to the maximum extent feasible.
- ▶ **Policy OSC-1.4:** New development shall preserve and incorporate into site planning natural drainages that could support riparian habitat to the greatest extent feasible.
- ▶ **Policy OSC-1.8:** Roads, water lines, sewer lines, drainage facilities, and other public facilities constructed to serve development shall be located and designed to avoid substantial impacts to stream courses, associated riparian areas, and wetlands, to the greatest extent feasible.
- ▶ **Policy OSC-3.4:** New development shall control the movement of debris and sediment, and the rate and dispersal of runoff before drainage into watercourses and Suisun Marsh through the incorporation of erosion control measures.

- **Policy OSC-3.5:** New development adjacent to watercourses, Suisun Slough, and Suisun Marsh shall include buffer areas, as needed, to avoid flood hazards, protect water quality, and preserve habitat for wildlife.

## Conclusion

With adoption and implementation of the policies and programs in the 2035 General Plan, combined with current land use, stormwater, grading, and erosion control regulations, this impact would be **less than significant**. The impact would be reduced to a **less-than-significant level** because BMPs and a SWPPP will be prepared for projects accommodated under the 2035 General Plan, along with a grading and erosion control plan, all of which are specifically designed to reduce erosion to the maximum extent feasible.

## Mitigation Measure

No mitigation is required.

**IMPACT 3.7-3** **Geologic Hazards Related to Unstable Soils, Expansive Soils, and Soil Unsuitable for Septic Systems.** *Land use change accommodated under the 2035 General Plan would result in the placement of buildings and infrastructure in areas of unstable soils, soils with high a shrink-swell potential, and in locations where the soil is not appropriate for use with septic systems. The impact is **potentially significant**.*

A review of NRCS (2012) soil data indicates that Planning Area soils have been rated with high to moderate limitations for construction of buildings and roads because of low soil strength, subsidence potential, and ponding and soil saturation. Construction in unstable soils could result in structural damage to buildings, roads, and bridges.

Expansive soils shrink and swell as a result of moisture change. These volume changes can result in damage over time to building foundations, underground utilities, and other subsurface facilities and infrastructure if they are not designed and constructed appropriately to resist the damage associated with changing soil conditions. Based on a review of NRCS (2012) soil survey data, most of the soil types in the Planning Area have a high shrink-swell potential, indicating that the soils are expansive.

Soils in the Planning Area have a low permeability rate and a high water holding capacity and thus tend to “perc” too slowly, rendering them unsuitable for conventional septic systems. Based on a review of NRCS (2012) soil data, all but the extreme western portion of the Planning Area is rated with a severe limitation because the soils are unsuitable for conventional septic systems.

For the reasons discussed above, impacts related to construction in unstable soils, expansive soils, and the unsuitability of Planning Area soils for septic systems are considered **potentially significant**. In addition, the lack of soil suitability for septic systems could result in an indirect, **potentially significant** impact related to water quality.

## Existing Regulations Related to Soils

The City has adopted the 2010 CBC. The CBC includes engineering practices that require special design and construction methods to reduce or eliminate hazards from construction in expansive soil. Compliance with the

CBC ensures appropriate design and construction of building foundations to resist soil movement. In addition, the CBC also contains drainage-related requirements to reduce seasonal fluctuations in soil moisture content. Construction in soils of low strength is also addressed in the CBC through implementation of soil engineering tests and amending and compacting soils.

### Relevant Policies and Programs of the 2035 General Plan

- ▶ **Policy PHS-14.1:** The City will implement state and local building code requirements, including those related to structural requirements and seismic safety criteria, in order to reduce risks associated with seismic events and unstable and expansive soils.
- ▶ **Policy PHS-14.2:** The City will require the preparation of a geotechnical site investigation for new development projects. The project will be required to implement any recommendations made in the investigation to reduce the potential for ground failure due to geologic or soil conditions.
- ▶ **Policy PHS-14.3:** The City will require new development that could be adversely affected by geological and/or soil conditions to include project features that minimize these risks.
- ▶ **Program PHS-14.1:** Geotechnical Investigations. The City will require geotechnical evaluation and recommendations before development or redevelopment activities. Such evaluations will be required to focus on potential hazards related to liquefaction, erosion, subsidence, seismic activity, and other relevant geologic hazards and soil conditions for development. New development would be required to incorporate project features that avoid or minimize the identified hazards to the satisfaction of the City.
- ▶ **Policy PHS-5.8:** Septic systems are not allowed in new developments and all development must connect to the regional sewer system for treatment of wastewater.

### Conclusion

With adoption and implementation of policies and programs in the 2035 General Plan, combined with current construction regulations, this impact is considered **less than significant**. The City's finding is based on the requirement for site-specific geotechnical reports that identify specific methods to reduce hazards from construction in unstable and expansive soils, and because installation of septic systems would not be allowed.

### Mitigation Measure

No mitigation is required.

**IMPACT 3.7-4**    **Loss or Damage to Paleontological Resources During Earth-Moving Activities.** *Paleontological resources could occur in Pleistocene-age sediments that underlie portions of the Planning Area. Construction activities in these areas could result in damage to, or destruction of unknown subsurface paleontological resources. Disturbance of unique paleontological resources would be a **potentially significant** impact.*

The Planning Area is underlain by Holocene- and Pleistocene-age alluvium, and by the Tehama Formation. By definition, in order to be considered a fossil, an object must be more than 11,000 years old. Therefore, the Holocene-age alluvium would not contain “unique” paleontological resources. The Pleistocene alluvium is

composed of fresh-water stream deposits along canyons and at the heads of older alluvial fans, and fresh-water marsh deposits. Vertebrate fossils found in Pleistocene alluvium are representative of the Rancholabrean land mammal age from which many taxa are now extinct and include, but are not limited to bison, mammoth, ground sloths, saber-toothed cats, dire wolves, cave bears, rodents, birds, reptiles and amphibians (Helley et al. 1979, Savage 1951, Stirton 1939). A search of the U.C. Berkeley Museum of Paleontology (UCMP) Database (2012) contains 43 localities from which vertebrate fossils have been recovered in the Tehama Formation throughout northern California. Several hundred specimens have been recovered including horse, deer, coyote, ground sloth, peccary, turtle, tortoise, mammoth, gopher, bony fish, several types of rodents, and elephant. UCMP locality 2703 in Suisun Slough, approximately 3.5 miles south of the Planning Area, yielded leg and tooth fragments from a Rancholabrean-age horse. Because of the number of vertebrate fossils recovered from the Pleistocene alluvium and the Tehama Formation, both are considered to be paleontology sensitive. Therefore, the potential for damage to previously unknown unique paleontological resources during earthmoving activities in these two formations is considered a **potentially significant** impact.

### Provisions Related to Paleontological Resources

The Society of Vertebrate Paleontology (1995, 1996), a national scientific organization of professional vertebrate paleontologists, has established standard guidelines that outline acceptable professional practices in the conduct of paleontological resource assessments and surveys, monitoring and mitigation, data and fossil recovery, sampling procedures, specimen preparation, analysis, and curation. Most practicing professional paleontologists in the nation adhere to the Society of Vertebrate Paleontology assessment, mitigation, and monitoring requirements, as specifically spelled out in its standard guidelines.

### Relevant Policies and Programs of the 2035 General Plan

- **Program OSC-5.1: Paleontological Resource Training and Recovery.** Prior to the start of earthmoving activities that would disturb more than 1 acre of land within the Late Pleistocene alluvium or the Tehama Formation, the project applicant shall retain a paleontologist to provide a brief training session for all construction personnel involved with earthmoving activities regarding the possibility of encountering fossils, the appearance and types of fossils likely to be seen during construction, and proper notification procedures should fossils be encountered. If paleontological resources are discovered during earthmoving activities, the construction crew shall immediately cease work in the vicinity of the find and notify the Suisun City Department of Community Development. The project applicant(s) shall retain a qualified paleontologist to evaluate the resource and prepare a recovery plan. The recovery plan may include, but is not limited to, a field survey, construction monitoring, sampling and data recovery procedures, museum curation for any specimen recovered, and a report of findings. Recommendations in the recovery plan that are determined by the City to be necessary and feasible shall be implemented before construction activities can resume at the site where the paleontological resources were discovered.

### Conclusion

With adoption and implementation of the proposed goals, policies, and programs in the 2035 General Plan, this impact would be **less than significant** because earth-moving activities in paleontologically-sensitive rock formations would be subject to requirements consisting of construction worker personnel education, halting of work in the vicinity of any fossil specimen(s) uncovered, and preparation of a recovery plan for said specimen(s).

## Mitigation Measure

No mitigation beyond the 2035 General Plan policies and programs is required.

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## **3.8 HAZARDS AND HAZARDOUS MATERIALS**

### **3.8.1 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES**

#### **METHODOLOGY**

This analysis considers the range and nature of foreseeable hazardous materials use, storage, and disposal resulting from implementation of the 2035 General Plan, and identifies the primary ways that these hazardous materials could expose individuals or the environment to health and safety risks. This analysis also provides a qualitative evaluation of impacts associated with the potential presence of hazardous materials or hazards in the Planning Area, and an evaluation of the extent to which the 2035 General Plan would allow uses that commonly employ or generate hazardous materials or waste in their production processes.

Compliance with applicable federal, state, and regional and local health and safety laws and regulations by residents and businesses in the City would protect the health and safety of the public. State and local agencies are required to enforce applicable requirements. In determining the level of significance, the City's analysis assumes compliance with relevant federal, state, regional, and local ordinances and regulations.

The range and types of uses accommodated under the 2035 General Plan can be identified only in general terms. The nature of general plans is that specific land uses are not identified. Rather, categories of land use are defined that would allow a wide range of specific uses. The specific types of businesses allowed in mixed-use, retail, commercial, and industrial land use designations, for example, and whether or not they would generate or use hazardous materials cannot be determined with any precision at the time of preparation of a general plan. Businesses, such as gasoline service stations and dry cleaners, are some of the most common retail operations that typically use hazardous materials (motor fuels and solvents, respectively), but other possible commercial and industrial businesses could potentially use a range of oils and lubricants, solvents, fertilizers, pesticides and herbicides, and other chemicals and materials in liquid, solid, or gas form. Future development in the Planning Area could involve a variety of land uses, including residences, commercial uses, industrial uses, public/quasi-public uses, offices, and other land uses. This analysis assumes and evaluates a broad range of potential land uses that could handle hazardous materials, and a broad range of potential hazardous materials that could be associated with the uses.

A preliminary review of environmental risk databases was conducted, including the Department of Toxic Substances Control's (DTSC's) GeoTracker and EnviroStor web sites, but this analysis did not include any sampling, site specific review, laboratory analysis, or inspection of buildings or site surfaces. Site-specific investigation for projects developed under the 2035 General Plan will be required to address hazardous materials conditions. For example, Phase I environmental site assessments would be required for specific projects pursuant to California Government Code Section 65962.5, and if an assessment indicates the presence or likely presence of contamination, Phase II soil/groundwater testing and remediation could be required before development on a site-specific basis.

#### **THRESHOLDS OF SIGNIFICANCE**

Based on Appendix G of the State CEQA Guidelines, the proposed project would result in a potentially significant impact on hazards and hazardous materials if it would:

- ▶ create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;
- ▶ create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment;
- ▶ emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school;
- ▶ be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment;
- ▶ result in a safety hazard for people residing or working in the project area, for a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport;
- ▶ result in a safety hazard for people residing or working in the project area, for a project within the vicinity of a private airstrip;
- ▶ impair implementation of or physically interfere with an adopted emergency-response plan or emergency-evacuation plan; or
- ▶ expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

## Impact Analysis

**IMPACT 3.8-1**     **Routine Transport, Use, or Disposal of Hazardous Materials.** *Land use change accommodated under the 2035 General Plan would result in an increase in the routine transport, use, and/or disposal of hazardous materials, which could result in exposure of such materials to the public through either routine use or accidental release. Implementation of 2035 General Plan policies and programs, as well as the implementation of the Local Hazard Mitigation Plan in combination with existing state and federal regulations, would reduce impacts related to the routine transportation of hazardous materials. This impact is considered **less than significant**.*

The 2035 General Plan would accommodate development of new residential, commercial, and light industrial uses. New residential development would result in increased use, storage, and disposal of household hazardous materials. The amount of hazardous materials transported through the Planning Area on main local, regional routes, and state routes (i.e., State Route [SR] 12) is likely to increase as a result of new development allowed by the 2035 General Plan and region growth. With additional development anticipated under the 2035 General Plan along major transportation corridors, more people would be potentially exposed to toxic spills or releases under buildout conditions compared to existing conditions.

At the federal level, the principal agency regulating the generation, transport, and disposal of hazardous substances is the U.S. Environmental Protection Agency (EPA), under the authority of the Resource Conservation and Recovery Act (RCRA). EPA has delegated many of the RCRA requirements to the DTSC. The DTSC has primary regulatory responsibility for hazardous waste management and can delegate authority for the generation,

transport, and disposal of hazardous materials to local jurisdictions. The following discussion summarizes potential sources of hazardous materials in the Planning Area and identifies existing state and federal regulations that would ensure the routine transport, use, and disposal of hazardous materials would not create a significant hazard to the public.

### **Existing Regulations for Railroad Transportation of Potentially Hazardous Materials**

The Union Pacific Railroad is located along the northwestern portion of the City limits. Although the rail line is owned by the Union Pacific Railroad, the line is also used by the Burlington Northern Santa Fe Railroad and California Northern Railroad. New land uses in areas near to the railway could include residential, retail, commercial service, and office uses. The amount of hazardous materials transported through the City on railways could potentially increase during buildout of the Planning Area. This potential increase relates more to regional growth or growth in external areas and not to land use change anticipated under the 2035 General Plan. Types of hazardous cargo regularly transported out of, into, and through the Planning Area by railroad and other surface transportation modes include flammable liquids, corrosive materials, compressed and/or poisonous gases, explosives, flammable solids, and irritating materials. Transportation of hazardous materials on rail lines is regulated by the Federal Railroad Administration (FRA). Railroad facilities and track clearances are also regulated by the California Public Utilities Commission (CPUC). FRA and CPUC regulations are continuously updated based on technological advances and improved understanding of past incidents. The potential for train accidents reduce as tracks and grade crossings are improved because rails would have better strength and the possibility for collision with vehicles crossing the tracks would be reduced with better site-line standards. Hazardous materials are routed based on their toxicity, volatility, and other factors that could cause harm to humans or sensitive environments. The regulations would improve brake performance and crashworthiness of tank cars to reduce the potential for the release of hazardous materials in the event that a tank car was derailed.

Increased rail traffic may occur as a result of shipping North American-sourced crude oil to Benicia. Beginning in 2014, the State will apply a 6.5-cent fee on oil companies for every barrel of crude oil that arrives in California on rail from out of state, or that is piped to refineries from inside the State. The resulting funds will be allocated for oil spill prevention and preparation work, and for emergency cleanup costs. The efforts will be focused on spills that threaten waterways, and will allow officials to conduct response drills (City of Benicia 2014).

### **Existing Regulations for Petroleum and High-Pressure Gas Pipelines**

Pipelines within the Planning Area also transport hazardous materials. These include two Kinder-Morgan Pipeline Company petroleum pipelines that parallel the Union Pacific Railroad, PG&E high-pressure gas lines, and Travis Air Force Base (AFB) jet fuel lines that are located near the Downtown Waterfront Area and along SR 12.

Pipeline facilities would be subject to regular inspection and maintenance activities required by the U.S. Department of Transportation's (DOT's) Pipeline and Hazardous Materials Safety Administration (PHMSA) regulations and would include, but would not be restricted to, regular inspections of the terminal and pipeline route to inspect for visible leaks and to evaluate aboveground equipment including valve stations, pump and power stations; monthly inspections of to ensure the integrity of pipeline corrosion protection; excavation and repair of pipeline segments experiencing degradation; and repair of pipeline anomalies identified during internal inspection or at locations damaged by third parties.

In addition, the CPUC is the agency authorized to oversee gas pipeline facilities within the State and has rules governing design, construction, testing, operation and maintenance of gas gathering, transmission and distribution piping systems.

Furthermore, the Travis AFB fuel line would be subject to specific criteria for operations, monitoring, and protection of petroleum fuel facilities as outlined in the U.S. Department of Defense (DOD) Unified Facilities Criteria 3-460-03, Operation and Maintenance of Petroleum Systems (DOD 2003).

### **Existing Regulations for Use, Storage, and Disposal of Hazardous Materials in Commercial and Industrial Uses**

Retail, commercial, and light industrial uses accommodated under the 2035 General Plan could include retail and service commercial operations; research, assembly, fabrication, storage, distribution, and processing uses; and professional offices that may result in increased use, storage, and/or disposal of hazardous materials during routine operations. Of particular concern are facilities with underground storage tanks or other methods of storage that could accidentally leak into the soil, water, or air. Specific examples of such facilities include gas stations, automotive repair shops, and dry cleaners. In addition, groundwater could become contaminated from these impairments.

In addition, the construction of these land uses would temporarily involve the storage, use, and transport of hazardous materials (e.g., asphalt, fuel, lubricants, paint) during construction phases of projects accommodated under the 2035 General Plan.

Facilities developed under the 2035 General Plan that would use hazardous materials on-site would be required to obtain permits and comply with appropriate regulatory agency standards, including the Hazardous Materials Release Response Plans and Inventories (Business Plan Act), designed to avoid hazardous waste releases and protect the public health. Further, industries subject to the California Accidental Release Prevention (CalARP) would be subject to additional planning and reporting.

Of particular concern are facilities with underground storage tanks or other methods of storage that could be impaired during a seismic event or could otherwise accidentally leak into the soil, water, or air. Such facilities include gas stations, automotive repair shops, and dry cleaners. Damage could result in adverse effects to the soil and air, and potentially leach into groundwater.

Transportation of hazardous materials on area roadways is regulated by the California Highway Patrol and DOT. Hazardous materials regulations, which are codified in CCR Titles 8, 22, and 26, and their enabling legislation set forth in Chapter 6.5 (Section 25100 et seq.) of the California Health and Safety Code, were established at the state level to ensure compliance with the DOT's Hazardous Materials Transportation Act regulations to reduce the risk to human health and the environment from the routine use of hazardous substances. Programs implemented under these regulations provide improved procedures for the safe handling of hazardous materials through worker training and implementation of best available technologies for use, storage, and transport and would aid in a more coordinated, quicker response in the event of accidental releases. Under direction of these laws, the technologies employed to clean up hazardous materials are improved and more universally employed.

Use of these materials is regulated by DTSC, as outlined in Title 22 of the California Code of Regulations. DOT (through the Hazardous Materials Transportation Act), and other regulatory agencies (including the CPUC for

natural gas transmission lines) provide standards designed to avoid releases including provisions regarding securing materials and container design.

Existing state and federal regulations would reduce impacts related to the routine transportation, use, and disposal of hazardous materials to a **less-than-significant** level.

### **Relevant Policies and Programs of the 2035 General Plan**

The 2035 General Plan policies and programs are intended to address the routine transport, use, or disposal of hazardous materials. The City will require new private developments to assess and mitigate hazardous materials risks and ensure safe handling, storage, and movement in compliance with local, state, and federal safety standards; require that large quantities of hazardous materials be securely contained in a manner that minimizes risk until they can be transported offsite and neutralized to a nonhazardous state in a proper manner; and require that dedicated pipeline rights-of-way be permanently protected from construction encroachment, particularly in areas where high-pressure pipelines adjoin developable properties. The City will update the Local Hazard Mitigation Plan to ensure that it is kept up-to-date with any advances in technology and changes in relevant laws and regulations. In addition, businesses shall submit their Hazardous Materials Business Plans (HMBP) to the City and the Solano County Environmental Health Services Division for approval prior to issuance of a building permit, occupancy permit, or business license within Suisun City, unless the business obtains an exemption from the Health Services Division.

Relevant policies and programs are provided below:

- ▶ **Program OSC-2.1: Conservation Planning.** The City, in collaboration with other participating agencies, will participate in development, adoption, and implementation of the SMHCP. Mitigation and conservation measures from the SMHCP will be incorporated into the City's monitoring and implementation of the General Plan, as appropriate.
- ▶ **Policy OSC-3.4:** New developments shall control debris, sediment, and the rate and dispersal of runoff before drainage into watercourses and Suisun Marsh through the incorporation of erosion control measures.
- ▶ **Policy PHS-10.1:** The City will assess risks associated with public investments and other City-initiated actions, and new private developments shall assess and mitigate hazardous materials risks and ensure safe handling, storage, and movement in compliance with local, state, and federal safety standards.
- ▶ **Policy PHS-10.2:** The City will protect property and life from disaster by implementing the Local Hazard Mitigation Plan.
- ▶ **Policy PHS-10.3:** The City will require that sites containing hazardous materials or waste be remediated in conformance with applicable federal and state standards prior to new development or adaptive reuse projects that could be substantially and adversely affected by the presence of such contamination.
- ▶ **Policy PHS-10.4:** The City will prohibit the transportation of hazardous materials through residential areas in quantities greater than those used in routine household maintenance.

- ▶ **Policy PHS-10.5:** The City will require that large quantities of hazardous materials be securely contained in a manner that minimizes risk until they can be transported off-site and neutralized to a nonhazardous state and appropriately disposed.
- ▶ **Policy PHS-10.6:** The City will require that all hazardous waste transfer stations, disposal facilities, and residual repositories be sited at least 2,000 feet away from Travis AFB accident potential zones.
- ▶ **Policy PHS-10.7:** The City will prohibit the development of hazardous waste storage facilities south of SR 12 to prevent the possibility of upset in close proximity to Suisun Marsh.
- ▶ **Policy PHS-10.8:** The City will require that dedicated pipeline rights-of-way be permanently protected from construction encroachment, particularly in areas where high-pressure pipelines adjoin developable properties.
- ▶ **Program PHS-10.1 Local Hazard Mitigation Plan:** The City will periodically collaborate with interested service providers to update the Local Hazard Mitigation Plan. With each update, information will be included to reflect changes in conditions since the last update, along with any new emergency response methods, advances in technology, and changes in relevant laws and regulations. The City will seek funding to implement action items listed in the Local Hazard Mitigation Plan.
- ▶ **Program PHS-10.2 Hazardous Materials Business Plans:** Businesses shall submit their Hazardous Materials Business Plans (HMBP) to the City and the Solano County Environmental Health Services Division for approval prior to issuance of a building permit, occupancy permit, or business license within Suisun City, unless the business obtains an exemption from the Health Services Division.
- ▶ **Program PHS-10.3 Hazardous Building Materials Analysis:** For projects involving demolition that could disturb asbestos or lead-based paint, the City will require a hazardous building analysis. Prior to the issuance of building or demolition permits, the City will require project applicant(s) to hire a Certified Asbestos Consultant (CAC) to investigate whether any of the existing structures or infrastructure contain lead or asbestos-containing materials (ACMs) that could become friable or mobile during demolition, renovation, or other construction-related activities. If ACMs or lead-containing materials are found, the project applicant(s) shall ensure that such materials are properly removed by an accredited contractor in accordance with EPA and the California Occupational Safety and Health Administration (Cal-OSHA) standards and BAAQMD asbestos rules. In addition, all activities (construction or demolition) in the vicinity of these materials shall comply with Cal-OSHA standards related to exposure of workers to asbestos and lead. The lead-containing materials and ACMs shall be handled properly and transported to an appropriate disposal facility.

Concurrent with the preparation of the 2035 General Plan, the City and Suisun Fire Protection District are in the process of drafting a Local Hazard Mitigation Plan (LHMP). In particular, the LHMP will provide a prioritized list of strategies, programs, policies, and actions to prevent and to respond emergencies including spills of hazardous and toxic materials.

## Conclusion

The above 2035 General Plan policies and programs require consideration of hazardous materials issues in the land use planning process, which in some instances may require setbacks or buffers from known potentially hazardous facilities. Projects accommodated under the 2035 General Plan would be required to implement and

comply with existing federal and state hazardous materials regulations identified above and each of these regulations is specifically designed to protect the public health through improved procedures for the handling of hazardous materials, better technology in the equipment used to transport these materials, and a more coordinated quicker response to emergencies. Therefore, impacts related to the creation of significant hazards to the public through routine, transport, use, disposal, and risk of upset is considered **less than significant**.

#### Mitigation Measure

No mitigation is required.

**IMPACT 3.8-2** Potential Human Health Hazards from Exposure to Existing Hazardous Materials. *Land uses accommodated under the 2035 General Plan could result in exposure to existing hazardous materials. The impact is **potentially significant**.*

Land uses and development consistent with the 2035 General Plan could result in exposure to existing hazardous materials. A search of the DTSC's GeoTracker web site (DTSC September 2010) found three records of known hazardous material sites that are scheduled for investigation, remediation, or are under remediation:

- ▶ Crystal Middle School, located at 100 Cordelia Street, is the only site with leaking underground storage tanks in the City. Contaminants of concern are heating oil/fuel oil.
- ▶ Sheldon Oil Company, located at 526 School Street in the downtown area, is an open cleanup site involving chlorinated solvents.

Major releases of hazardous materials from pipelines have occurred in Solano County, making this a particular concern in Suisun City. A fuel pipeline failed near Peabody and Vanden Roads in Fairfield in 1994 and a petroleum leak from the Southern Pacific Pipeline Company (now owned by Kinder Morgan) pipelines occurred just northeast of the City limits in 2009. In 2004, a Kinder Morgan petroleum pipeline ruptured, spilling an estimated 1,500 barrels of diesel fuel into marshes adjacent to Suisun Bay. Other pipelines transporting hazardous materials include PG&E high-pressure gas lines and Travis AFB jet fuel lines. There was a valve failure in the Travis AFB pipeline that leaked for approximately one month in a residential development called, "Lawler Ranch." It is possible that such failures could occur in the future, but pipelines do not represent a safety hazard unless their structural integrity is compromised, resulting in a release of natural gas, crude oil, or fuel to the environment, and in rare cases, ignition and combustion of the product released. The events that could lead to a pipeline leak or rupture include: third party dig-ins, corrosion or deterioration, weld or material defects, and ground movement. The events that could lead to the ignition of the product released include: sparks caused from metal saws or other equipment breaching the pipeline, mechanical equipment that create sparks as part of internal combustion, and open flame sources. As discussed above, pipeline facilities are regulated by the DOT PHMSA and the CPUC and DOD regulations provide further oversight for natural gas pipelines and the Travis AFB fuel pipeline, respectively.

Redevelopment, infill development, and greenfield development through the planning horizon of the 2035 General Plan may include capital improvement projects that could disturb contaminated soils or subsurface hazardous structures. Along with the DTSC, the Regional Water Quality Control Board (RWQCB) is responsible for implementing regulations pertaining to management of soil and groundwater investigation and cleanup. RWQCB regulations are contained in Title 27 of the CCR. The Solano County Department of Resource

Management, as the local Certified Unified Program Agency, conducts permitting, inspection, and monitoring of underground storage tanks and is responsible for the implementation, enforcement and administration of the Aboveground Petroleum Storage Act from the State Water Resources Control Board. The RWQCB and the Solano County Department of Resource Management as well the DTSC typically oversee investigation and clean-up of contaminated sites.

ACMs and lead-based paints may be present in structures located throughout the City's Sphere of Influence (SOI), but particularly in the historic downtown. The renovation or demolition of existing structures constructed before 1978 can pose an exposure risk to workers from lead-based paint and those constructed before 1989 can pose an exposure risk to workers from ACMs. Asbestos may also be found in pipelines that may need to be relocated or replaced during the construction of capital improvements. Unmitigated demolition or renovation of structures containing ACMs and lead-based paint could create asbestos dust, lead paint chips and lead dust, which pose as inhalation hazards for both construction workers and the surrounding public. In addition, collection and disposal of ACMs and lead paint debris by untrained personnel could cause asbestos and lead paint dust emissions to be transported offsite, resulting in the release of hazardous material into the environment. The impact is **potentially significant**.

### **Relevant Policies and Programs of the 2035 General Plan**

The 2035 General Plan contains policies and programs that are intended to address the potential for health hazards from exposure to existing hazardous materials. The City will assess risks associated with public investments and other City-initiated actions, and new private developments shall assess and mitigate hazardous materials risks and ensure safe handling, storage, and movement in compliance with local, state, and federal safety standards. The City will require that sites containing hazardous materials or waste be remediated in conformance with applicable federal and state standards prior to new development or adaptive reuse projects that could be substantially and adversely affected by the presence of such contamination. The City will also consult with appropriate regional, state, and federal agencies to monitor water quality and address local sources of groundwater and soil contamination, including possible contamination from activities at Travis AFB, underground storage tanks, septic tanks, and industrial uses, as necessary, to achieve state and federal water quality standards.

In addition, for projects involving demolition that could disturb asbestos or lead-based paint, the City will require a hazardous building analysis. Prior to the issuance of building or demolition permits, the City will require project applicant(s) to hire a CAC to investigate whether any of the existing structures or infrastructure contain lead or ACMs that could become friable or mobile during demolition, renovation, or other construction-related activities. If ACMs or lead-containing materials are found, the project applicant(s) shall ensure that such materials are properly removed by an accredited inspector in accordance with EPA and Cal-OSHA standards and Bay Area Air Quality Management District asbestos rules. In addition, all activities (construction or demolition) in the vicinity of these materials shall comply with Cal-OSHA standards related to exposure of workers to asbestos and lead. The lead-containing materials and ACMs shall be handled properly and transported to an appropriate disposal facility.

- **Policy PHS-10.1:** The City will assess risks associated with public investments and other City-initiated actions, and new private developments shall assess and mitigate hazardous materials risks and ensure safe handling, storage, and movement in compliance with local, state, and federal safety standards.

- ▶ **Policy PHS-10.3:** The City will require that sites containing hazardous materials or waste be remediated in conformance with applicable federal and state standards prior to new development or adaptive reuse projects that could be substantially and adversely affected by the presence of such contamination.
- ▶ **Policy PHS-5.6:** The City will consult with appropriate regional, state, and federal agencies to monitor water quality and address local sources of groundwater and soil contamination, including possible contamination from activities at Travis AFB, underground storage tanks, septic tanks, and industrial uses, as necessary, to achieve state and federal water quality standards.
- ▶ **Program PHS-10.3:** For projects involving demolition that could disturb asbestos or lead-based paint, the City will require a hazardous building analysis. Prior to the issuance of building or demolition permits, the City will require project applicant(s) to hire a Certified Asbestos Consultant (CAC) to investigate whether any of the existing structures or infrastructure contain lead or asbestos-containing materials (ACMs) that could become friable or mobile during demolition, renovation, or other construction-related activities. If ACMs or lead-containing materials are found, the project applicant(s) shall ensure that such materials are properly removed by an accredited contractor in accordance with EPA and the California Occupational Safety and Health Administration (Cal-OSHA) standards and BAAQMD asbestos rules. In addition, all activities (construction or demolition) in the vicinity of these materials shall comply with Cal-OSHA standards related to exposure of workers to asbestos and lead. The lead-containing materials and ACMs shall be handled properly and transported to an appropriate disposal facility.

## Conclusion

Implementation of policies and programs in the 2035 General Plan and compliance with applicable state and federal regulations and standards identified above would reduce the potential for exposure of land uses accommodated under the 2035 General Plan to hazardous materials. This impact is considered **less than significant**.

## Mitigation Measure

No mitigation is required beyond the policies and programs of the 2035 General Plan.

**IMPACT 3.8-3**     **Public Health Hazards from Project Development on a Known Hazardous Materials Site Compiled Pursuant to Government Code Section 65962.5.** *Travis AFB is identified as a Superfund site and is undergoing investigation and remediation under the direction of EPA and DTSC. The impact is **potentially significant**.*

Travis AFB was placed on the EPA National Priorities List as a Superfund site in 1989 and is undergoing investigation and remediation under the direction of EPA and DTSC. There are a wide variety of contaminants, such as heavy metals, volatile organic compounds, refined petroleum products and semi-volatile organic compounds that were released from historic aircraft fueling and maintenance activities. For environmental cleanup purposes, four Operable Units (OUs) have been delineated. These OUs consist of landfills, disposal areas or spill sites, firefighting training areas, tank storage areas, and groundwater contamination and potentially contaminated surface water bodies.

Off-Base migration of contaminants appears to be very limited, with minimal potential for harmful exposure (City of Suisun City 2010). Institutional controls limit access to on-Base source areas, operable units and abandoned structures, and have eliminated possible exposures to other sites of contamination and physical hazards within Travis AFB. However, if land uses occur on or in the vicinity of Travis AFB the likelihood of human exposure to

hazardous materials present in soil or groundwater should be re-evaluated by the Air Force, the EPA, or the DTSC. The impact is **potentially significant**.

### Relevant Policies and Programs of the 2035 General Plan

The 2035 General Plan identifies policies and programs that are intended to ensure that contaminated soils and groundwater on Travis AFB do not pose human health risks. The City will coordinate with the Army Corps of Engineers and Travis AFB to perform site investigations for the presence of potential hazards, including soil and groundwater contamination and unexploded ordnance that could potentially be located outside of the base but within the City's Sphere of Influence. If hazards are discovered, the City will continue to work with the other parties to clean up hazards to ensure safety to Suisun City residents.

- **Policy PHS-16.4** The City will communicate with the Army Corps of Engineers and Travis AFB on site investigations that may be required to determine the presence of potential hazards, including soil and groundwater contamination and unexploded ordnance, outside of the Base, but within the City's Planning Area.

### Conclusion

Implementation of the above 2035 General Plan policies and programs would ensure that contaminated soils and groundwater on Travis AFB do not pose human health risks by using existing facility information to identify areas of hazardous materials use and cleanup hazards and requiring consultation with Travis AFB to discuss land use issues. This impact is considered **less than significant**.

### Mitigation Measure

No mitigation is required beyond existing regulations and the policies and programs of the 2035 General Plan.

**IMPACT 3.8-4**     **Emission or Handling of Hazardous or Acutely Hazardous Materials, Substances, or Waste within One-Quarter Mile of an Existing or Proposed School.** Implementation of the 2035 General Plan would not result in development of uses that would emit or handle hazardous waste within ¼ mile of an existing school. *Population growth from new land uses accommodate under the 2035 General Plan could result in the need for new schools. Enforcement of California Department of Education school siting regulations, permitting requirements for individual hazardous material handlers and emitters, and enforcement of Public Resources Code Section 21151 during project-level environmental review would prevent future conflicts between hazardous materials handling and emissions and schools. This impact is considered less than significant.*

Land use changes proposed under the 2035 General Plan would not include development of land uses that would emit or handle hazardous waste within ¼ mile of an existing school. Population growth from new land uses accommodate under the 2035 General Plan could result in the need for new schools.

Certain health and safety requirements for school site selection are governed by state regulations and California Department of Education School Facilities Planning Division policies. These requirements are outlined in the *School Site Selection and Approval Guide* and relate to siting school facilities near or on suspected hazardous materials sites, or near facilities that emit hazardous air emissions, handle hazardous or acutely hazardous

materials, substances, or waste and requirements for conducting an environmental site investigation to determine the health and safety risks (if any) associated with a new school site (California Department of Education 2000).

In addition, Public Resources Code Section 21151 requires consultation with the appropriate school district for a project involving construction or alteration of a facility that might reasonably be anticipated to result in hazardous air emissions within one-quarter mile of a school.

**Conclusion**

Enforcement of California Department of Education school siting regulations, permitting requirements for individual hazardous material handlers and emitters, and enforcement of Public Resources Code Section 21151 during project-level environmental review would prevent future conflicts between hazardous materials handling and emissions and schools. This impact is considered **less than significant**.

**Mitigation Measure**

No mitigation is required.

**IMPACT**     **Safety Hazard for People Residing or Working Near Travis AFB.** *Lands within the Planning Area are designated as Zones C and D in the Travis AFB Land Use Compatibility Plan. The impact is **potentially significant**.*

3.8-5

As shown on Exhibit 3.8-1, the City and its Planning Area are within the Travis AFB Land Use Compatibility Plan (LUCP) planning boundaries.

All lands within the current City limits are in Zone D, as designated in the Travis AFB LUCP. This designation limits the height of structures and is assigned to lands surrounding the airport to minimize the number of people exposed to aircraft crash hazards. Other land uses that could potentially involve “hazards to flight,” as defined by the Travis AFB LUCP are required to be reviewed, conditioned if necessary, and approved by the Solano County Airport Land Use Commission (ALUC) prior to development. Land uses that may cause the attraction of birds are also prohibited. Land use compatibility requirements are designed to avoid increase in hazards related to development in the vicinity of airports.

The 2035 General Plan could potentially accommodate residential, retail, commercial service, and light industrial land uses and establish or expand mitigation banks in areas with the Zone D designation.

Lands north and south of Peterson Road and east of Walters Road within the Planning Area are designated Zone C in the Travis AFB LUCP. Zone C prohibits children’s schools, day care centers, libraries, hospitals, nursing homes, and hazards to flight. “Hazards to flight” include physical (e.g., tall objects), visual, and electronic forms of interference with the safety of aircraft operations. Development that may cause the attraction of birds to increase is also prohibited. Airspace review is required for proposed objects greater than 100 feet tall. The 2035 General Plan could potentially accommodate retail, commercial service, and light industrial land uses and could allow habitat mitigation banks in areas with the Zone C designation that would attract birds, potentially creating a bird aircraft strike hazard. For indoor uses, the maximum average number of people per acre in Zone C is 75 and for outdoor uses, the maximum average is 100. For a single acre of land, the maximum number of people is 300

for Zone C. The 2035 General Plan policies and programs require review and conditioning of land use change in order to avoid conflicts with the LUCP within Zone C.

Portions of the eastern portion of the City's Planning Area, but outside the current City limits are designated Zones A, B1, and B2 in the Travis AFB LUCP. Zone A consists of the Travis AFB runways together with immediately adjoining areas within the runway primary surface and clear zones. Zone B1 (Accident Potential Zone I) is an area of substantial risk situated within 7,500 feet of the runway ends and Zone B2 (Accident Potential Zone II) encompasses approach and departure flight tracks that are not aligned with the runway. New dwelling units are prohibited in Zones A and B1 and are strongly discouraged in Zone B2. Children's schools, day care centers, libraries, hospitals, nursing homes, aboveground bulk storage of hazardous materials, and "hazards to flight" are prohibited in Zones A, B1, and B2. The 2035 General Plan policies and programs require review and conditioning of land use change in order to avoid conflicts with Zones A, B1, and B2. This review would include proposals to establish or expand existing mitigation banks.

The Air Installation Compatible Use Zone Study (2009) designates Air Installation Compatible Use Zones (AICUZs) around the airfield and restricts incompatible land uses to reduce the public's exposure to safety hazards. The study identifies three AICUZs, which are shown on Exhibit 3.8-1:

- ▶ the Clear Zone, which begins at the end of each runway and extends outward 3,000 feet;
- ▶ Accident Potential Zone I, which begins at the outer end of the Clear Zone and is 5,000 feet long and 3,000 feet wide; and,
- ▶ Accident Potential Zone II, which begins at the outer end of Accident Potential Zone I and is 7,000 feet long and 3,000 feet wide.

The Clear Zone, Accident Potential Zone I, and Accident Potential Zone II identified in the AICUZ Study generally corresponds to areas Zone A, Zone B1, and Zone B2, respectively, in the Travis AFB LUCP.

Portions of the City's SOI located south of Peterson Road and north of SR 12 would be within the Clear Zone and Accident Potential Zone I. The Clear Zone is the highest accident potential area and the Air Force has adopted a policy of acquiring real estate interests in the Clear Zone through purchase or easement, where feasible. Land uses in Accident Potential Zone I could include industrial/manufacturing, transportation, communication/ utilities, wholesale trade, open space, recreation, and agriculture.

Other safety hazards for people residing or working near Travis AFB could result from new development located in the proximity of the Travis AFB munitions bunker that is located within Travis AFB east of Ellis Road and adjacent to the eastern portion of the Planning Area. Air Force Manual 91-201, Explosives Safety Standards, defines quantity distance arcs that must be maintained between explosive materials storage (e.g., munitions) and handling facilities and various other uses and identifies methods for establishing an explosive clear zone (United States Air Force 2011). Explosive clear zones are the area surrounding a potential explosion site and the Air Force considers these areas as unsuitable for habitation and public gatherings. The standards also require coordination with the Air Force to ensure public safety and to reduce risk associated with munitions.

## Relevant Policies and Programs of the 2035 General Plan

The 2035 General Plan includes policies and programs that are intended to further ensure that new land uses would be designed to avoid hazards related to development in the vicinity of Travis AFB. The City will restrict land uses and the height of development according to the requirements of the Travis AFB Airport Land Use Plan; prohibit the future development of sensitive land uses, including residential and schools, critical facilities, or uses that could result in large gatherings of people, within the base's Accident Potential Zone I boundary; or in any other areas that the Base determines to be at a greater risk of upset. New developments and public investments involving earth disturbance in Eastern area of the City's Sphere of Influence will also be required to incorporate permit requirements in coordination with Travis AFB and the State Department of Toxic Substances Control to reduce risk associated with munitions or explosives.

The 2035 General Plan requires new development to comply with regulations related to land use and the height of structures and requires review and conditioning of land use change in order to avoid conflicts with the LUCP within Zone D. The 2035 General Plan does not allow developed uses that would conflict with the AICUZ within the Clear Zone or Accident Potential Zone I.

In addition, the City will consult with representatives from Travis AFB to discuss land use issues, including potential land use conflicts, new development under consideration by the City, hazardous conditions, and possible changes in Base operations that could potentially have an effect on City operations. Discussions will also include efforts to provide biological resources mitigation in areas near Travis AFB that do not conflict with ongoing operations. The Community Development Department, along with the Fire Department representatives and other relevant department representatives will be involved.

- ▶ **Policy PHS-16.1:** The City will regularly coordinate closely with Travis AFB to ensure that existing and future land uses do not interfere with existing or planned operations at the Base.
- ▶ **Policy PHS-16.2:** The City will restrict land uses and the height of development according to the requirements of the Travis AFB Airport Land Use Plan
- ▶ **Policy PHS-16.3:** The City shall prohibit the future development of sensitive land uses, including residential and schools, critical facilities, or uses that could result in large gatherings of people, within the base's Accident Potential Zone I boundary; or in any other areas that the Base determines to be at a greater risk of upset.
- ▶ **Policy PHS-16.4:** The City will communicate with the Army Corps of Engineers and Travis AFB on site investigations that may be required to determine the presence of potential hazards, including soil and groundwater contamination and unexploded ordnance, outside of the Base, but within the City's Planning Area.
- ▶ **Program PHS-16.1:** The City will consult with representatives from Travis AFB to discuss land use issues. Discussion will include potential land use conflicts, new development under consideration by the City, hazardous conditions, and possible changes in Base operations that could potentially have an effect on implementation of the 2035 General Plan. Discussions will also include efforts to provide biological resources mitigation in areas near Travis AFB that do not conflict with ongoing operations. The Community Development Department, along with the Fire Department representatives and other relevant department representatives will be involved, as appropriate.

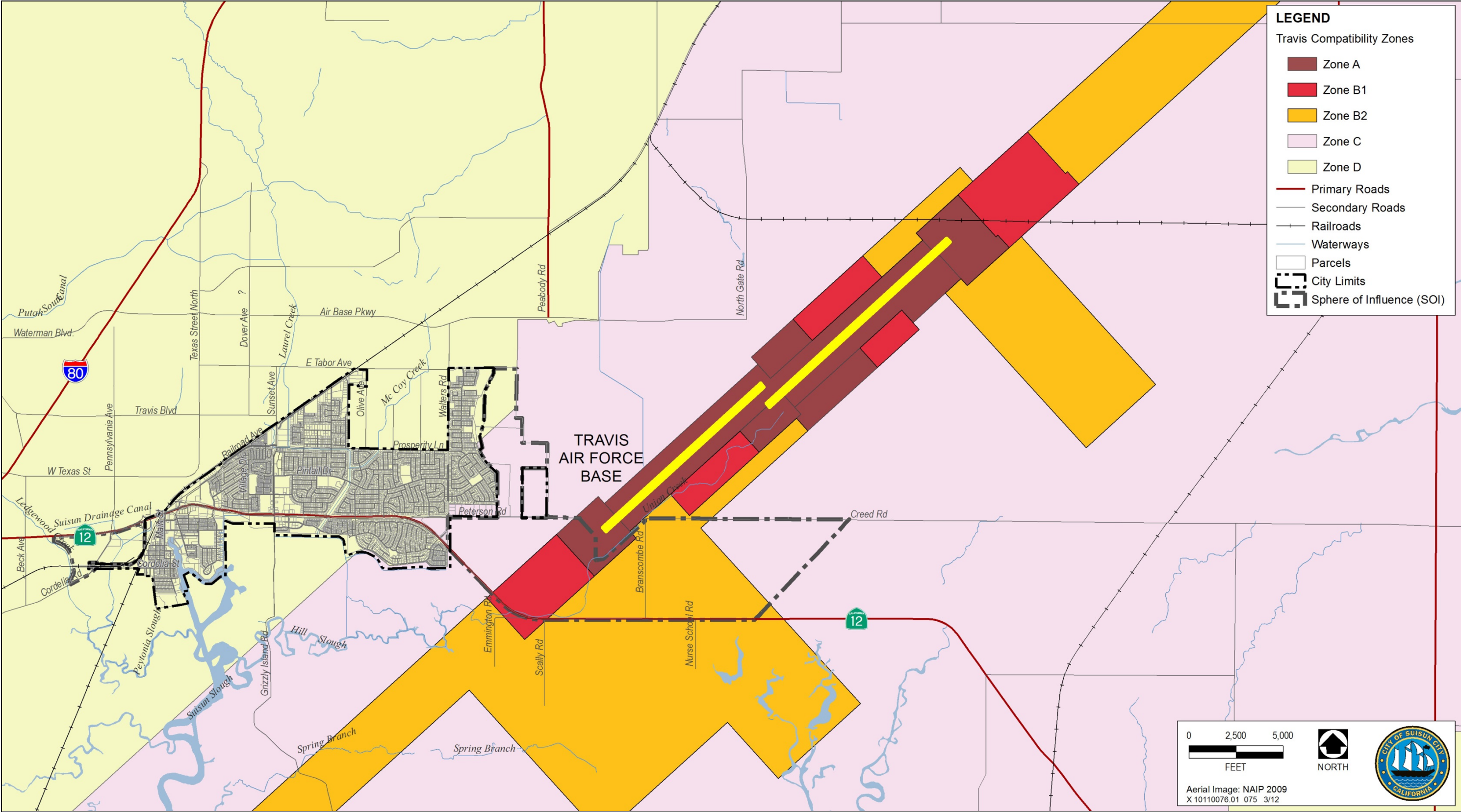
## Conclusion

Implementation policies and programs in the 2035 General Plan would ensure consistency with the Travis AFB LUCP and AICUZs and new land uses would not result in substantial obstructions that could contribute to plane

crashes or otherwise result in safety hazards for people residing or working near Travis AFB. Other land uses that could potentially involve “hazards to flight,” as defined by the LUCP are required to be reviewed, conditioned if necessary, and approved by the Solano County ALUC prior to development. In addition, compliance with requirements outlined in Air Force Manual 91-201 would ensure public safety and to reduce risk associated with munitions and explosions. This impact is considered **less than significant**.

#### Mitigation Measure

No mitigation beyond existing regulations and the policies and programs of the 2035 General Plan is required.



Source: Solano County 2006

Exhibit 3.8-1

Travis Land Use Compatibility Zones



**IMPACT**     **Interference with an Adopted Emergency-Response or Emergency-Evacuation Plan.** *Implementation of the 2035 General Plan would accommodate land use change, which would indirectly generate additional vehicular travel and would involve the development of additional residences requiring evacuation in case of an emergency. Implementation of 2035 General Plan policies and programs and the LHMP, as well as continued coordination with the Solano County Office of Emergency Services and participation in the County's Multi-Hazard Mitigation Plan would ensure that future development would not interfere with emergency-response or emergency-evacuation plans. This impact is considered **less than significant**.*

**3.8-6**

An efficient roadway and circulation system is vital for the evacuation of residents and the mobility of fire suppression, emergency response, and law enforcement vehicles. Implementation of the 2035 General Plan would accommodate land use change, which would indirectly generate additional vehicular travel and would involve the development of additional residences requiring evacuation in case of an emergency.

The Solano County Office of Emergency Services (OES) provides for the development, establishment, and maintenance of programs and procedures which assist in the protection of lives and property of residents from the effects of natural or human-caused disasters. Those disasters to which the county is subject and for which the office must train and properly respond include floods, earthquakes, major fires, storms, radiological or hazardous material incidents, aircraft accidents, mass casualty incidents, and any other emergency-related function. The Solano County OES has prepared and implements the Solano County Emergency Operations Plan, which identifies procedures for coordinating with local jurisdictions during evacuation operations (Solano County 2007). Also, Suisun City participates in the County's Multi-Hazard Mitigation Plan to prevent hazards and emergencies.

As discussed under Impact 3.8-1, the City and Suisun Fire Protection District are in the process of drafting a LHMP. The LHMP will provide a prioritized list of strategies, programs, policies and actions to prevent and to respond emergencies including disasters. The LHMP provides incident response recommendations for various stages of recovery, including immediate emergency response for both during and directly following an incident, immediate recovery, long-term recovery, and long-term disaster planning for future incidents to reduce the severity of similar incidents in the future.

The 2035 General Plan would indirectly generate additional vehicular travel and would involve the development of additional residences requiring evacuation in case of an emergency. The impact is **potentially significant**.

### **Relevant Policies and Programs of the 2035 General Plan**

The 2035 General Plan identifies policies and programs that ensure conformance with local emergency-response programs and continued cooperation with emergency-response service providers.

The City will provide public access to emergency response procedures in such locations as City Hall, Suisun City Library, and public schools and will otherwise promote awareness of emergency response and evacuation plans. The City shall designate evacuation routes in the event of a large-scale fire or other citywide emergency requiring

the evacuation of a substantial portion of the City's residents. The City will also require development and improvement standards to provide a circulation system with multiple access points, adequate provision for emergency equipment access, and evacuation egress.

The City will periodically collaborate with interested service providers to update the LHMP. Regular updates will take into account changes in environmental conditions, new emergency response methods, and new technologies to maintain immediate response and long-term recovery, and plan for future community resiliency in the event of a disaster. In addition, the City will review development and redevelopment projects, plans, and public investment decisions to ensure consistency with the LHMP.

- ▶ **Program PHS-10.1:** The City will periodically collaborate with interested service providers to update the Local Hazard Mitigation Plan. With each update, information will be included to reflect changes in conditions since the last update, along with any new emergency response methods, advances in technology, and changes in relevant laws and regulations. The City will seek funding to implement action items listed in the Local Hazard Mitigation Plan.
- ▶ **Policy PHS-15.2:** The City will review development and redevelopment projects, plans, and public investment decisions to ensure consistency with the Local Hazard Mitigation Plan.
- ▶ **Policy PHS-15.3:** The City will provide public access to emergency response procedures in such locations as City Hall, Suisun City Library, and public schools and will otherwise promote awareness of emergency response and evacuation plans.
- ▶ **Policy PHS-15.4:** The City's development and improvement standards will require a circulation system with multiple access points, adequate provision for emergency equipment access, and evacuation egress for new projects. New and redevelopment projects will be checked by the City to ensure proper emergency access is provided.
- ▶ **Policy PHS-15.5:** The City shall designate evacuation routes in the event of a large-scale fire or other citywide emergency requiring the evacuation of a substantial portion of the City's residents.

Implementation of these General Plan policies and programs and proposed LMHP policies and programs as well as continued coordination with the Solano County OES, and participation in the County's Multi-Hazard Mitigation Plan would ensure that future development would not interfere with emergency-response or emergency-evacuation plans. This impact is considered **less than significant**.

#### Mitigation Measure

No mitigation is required.

**IMPACT 3.8-7** **Exposure of Structures to Urban and Wildland Fires.** *Most of the undeveloped portions of the Planning Area are characterized as moderate fire risk. However, according to draft fire risk maps from CALFIRE, there are areas of high fire risk in the south-central and western portions of the Planning Area. Implementation of policies and programs in the 2035 General Plan and compliance with the Suisun Fire Protection District and California Fire Code regulations would ensure people and structures would not be exposed to a significant risk of loss or injury involving wildland fires. This impact is considered less than significant.*

Areas at risk for extreme wildland fires are designated by the California Department of Forestry and Fire Protection (CALFIRE) as those lands where dense vegetation with severe burn potential prevails. Although grasslands on the edges of Suisun City's Planning Area may be prone to wildfire, grassland fires are not as potentially intensive as mountainous brush fires. Undeveloped portions of the City's Planning Area are

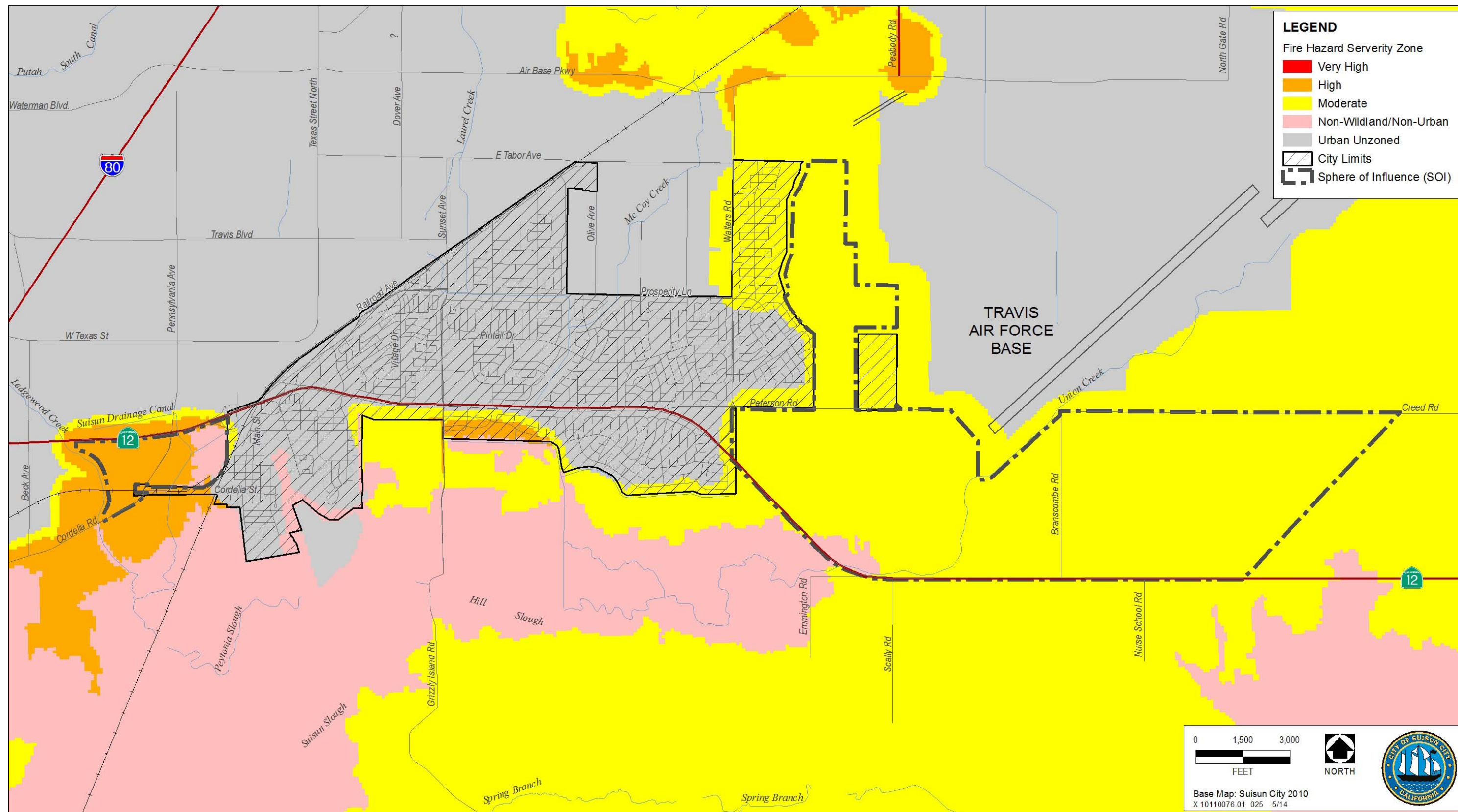
characterized as moderate fire risk, for the most part. However, according to draft fire risk maps from CALFIRE, there are areas of high fire risk in the south-central portion of the Planning Area east of Sunset Avenue and south of SR 12 and within the western portion of the Planning Area north and northwest of Cordelia Road and south of SR 12 (Exhibit 3.8-2).<sup>1</sup>

Existing development in areas characterized as high fire risk in the south-central portion of the Planning Area includes retail and residential land uses and Crescent Elementary School. The 2035 General Plan would accommodate development of additional retail and medium-density residential land uses in this area. The areas characterized as high fire risk within the western portion of the Planning Area are currently undeveloped. The 2035 General Plan would accommodate development of retail and live/work land uses in this area.

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<sup>1</sup> The exhibit included here was created from Geographic Information Systems (GIS) files from CALFIRE that are in draft form. The information on the CALFIRE website ([http://www.fire.ca.gov/fire\\_prevention/fhsz\\_maps/fhsz\\_maps\\_solano.php](http://www.fire.ca.gov/fire_prevention/fhsz_maps/fhsz_maps_solano.php)) is dated June of 2008. This website was last check on July 24, 2012. While the maps provided in PDF and JPEG format on CALFIRE's website combine "Non-Wildland/Non-Urban" and "Urban Unzoned," in the GIS files, these labels are available separately.





Source: CALFIRE 2007

**Exhibit 3.8-2**

**Fire Hazard Severity Zones for Local Responsibility Areas**



## Existing Regulations to Reduce Fire Risk

In addition to the 2035 General Plan policies and program, existing and new buildings and development would be required to comply with the Suisun City Fire Department and California Fire Code regulations related to construction, maintenance, and use of buildings would further reduce the risk of wildland fires. The California Fire Code addresses fire department access, fire hydrants, automatic sprinkler systems, fire alarm systems, fire and explosion hazards safety, hazardous materials storage and use, provisions intended to protect and assist fire responders, industrial processes, and many other general and specialized fire-safety requirements for new and existing buildings and the surrounding premises. The California Fire Code addresses wildland-urban interfaces, including requirements for vegetation and fuel management, maintenance of defensible space, the use of fire-resistant building materials, and implementation of construction methods to reduce the potential for wildland fire risks.

Existing regulations would reduce the impact to a **less-than-significant** level.

## Relevant Policies and Programs of the 2035 General Plan

The 2035 General Plan includes policies and program that are intended to reduce the risk of wildland fire hazards. Suisun City will continue to implement mutual assistance agreements with the City of Fairfield and Solano County for emergency services including fire and work cooperatively with the state of California and the federal government to assure a coordinated local response to any wild fires and the City will require setbacks future development adjacent to Suisun Marsh to provide defensible space and reduce potential for exposure to wildfires. In addition, the City will prepare and maintain a list of buildings and specific areas that could represent additional fire hazards, including vacant lots and those building that were constructed prior to requirements for fire-resistant construction materials, sprinklers, and other fire safety systems. The City will explore opportunities to collaborate with property owners to retrofit such buildings, as feasible, to reduce fire risk.

## Conclusion

Implementation of policies in the 2035 General Plan and compliance with the Suisun City Fire Department and California Fire Code regulations would ensure people and structures would not be exposed to a significant risk of loss or injury involving wildland fires. This impact is considered **less than significant**.

## Mitigation Measure

No mitigation is required.

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## 3.9 HYDROLOGY AND WATER QUALITY

### 3.9.1 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

#### METHODOLOGY

This analysis assumes that project applicant will be required to comply with applicable regulations. Impacts are evaluated qualitatively, based on anticipated construction and operational characteristics.

#### THRESHOLDS OF SIGNIFICANCE

Based on Appendix G of the State CEQA Guidelines, an impact on hydrology or water quality is considered significant if the proposed project would:

- ▶ violate any water quality standards or waste discharge requirements, including NPDES waste discharge or stormwater runoff requirements, state or federal antidegradation policies, enforceable water quality standards contained in the San Francisco Bay RWQCB's basin plan or statewide water-quality control plans, or federal rules that establish water quality standards in California;
- ▶ substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a substantial lowering of the level of the local groundwater table (e.g., the production rate of preexisting nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted);
- ▶ substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on-site or off-site;
- ▶ substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site;
- ▶ create or contribute runoff water that would exceed the capacity (peak flow) of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff;
- ▶ substantially degrade surface and groundwater water quality;
- ▶ place within a 100-year flood hazard area, as mapped on a federal flood hazard boundary map or FIRM or other flood hazard delineation map, structures that would impede or redirect flood flows;
- ▶ place housing within a 100-year flood hazard area as mapped on a federal flood hazard boundary or FIRM or other flood hazard delineation map;
- ▶ expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam; or
- ▶ expose people or structures to a significant risk of loss, injury, or death involving inundation by seiche, tsunamis, or mudflow.

## Impact Analysis

**IMPACT 3.9-1**     **Increased Erosion and Violation of Water Quality Standards.** *The changes in land use designations that would occur with implementation of the 2035 General Plan could result in additional short-term construction-related and long-term operational erosion and discharges of pollutants to receiving water bodies. Such pollutants could result in violation of water quality standards and could result in downstream siltation. However, with implementation of 2035 General Plan policies and programs, combined with current land use, stormwater, grading, and erosion control regulations, this impact would be **less than significant**.*

The following impact analysis addresses both construction-related erosion effects and long-term water quality effects.

The 2035 General Plan is anticipated to accommodate a variety of land use changes, including intensification of development on existing sites, demolition of existing structures with replacement land uses, and changes from undeveloped agricultural and open spaces lands to developed, urban uses. Each type of land use change has the potential to alter the types, quantities, and timing of contaminant discharges in stormwater runoff.

Short-term construction and grading activities during General Plan buildout could result in soil erosion and stormwater discharges of suspended solids and increased turbidity. Such activities could mobilize pollutants from project construction sites as contaminated runoff to off-site drainage channels. Many construction-related wastes have the potential to degrade existing water quality by altering the dissolved-oxygen content, temperature, pH, suspended-sediment and turbidity levels, or nutrient content, or by causing toxic effects in the aquatic environment.

The long-term operational discharges of urban contaminants (e.g., oil and grease, fuel, trash, fertilizer) into the stormwater drainage system and ultimate receiving waters would increase compared to existing conditions. The major factor in this increase is the expanded amount of impervious surfaces, such as parking lots, driveways, streets, rooftops, and sidewalks. Some contaminants associated with existing agricultural activities (e.g., sediment, nutrients, pathogens, agricultural chemicals) would decrease as these land uses are phased out during buildout of the 2035 General Plan. However there is very little agricultural activity in the Planning Area that would be subject to urban development and the potential discharges of contaminated urban runoff from paved and landscaped areas would increase or could cause or contribute to adverse effects on aquatic organisms in receiving waters.

Urban contaminants typically accumulate during the dry season and may be washed off when adequate rainfall returns in the fall to produce a “first flush” of runoff. The amount of contaminants discharged in stormwater drainage from developed areas varies based on a variety of factors, including:

- ▶ the intensity of urban uses, such as vehicle traffic;
- ▶ the types of activities that occur (e.g., office, commercial, industrial);
- ▶ the types of contaminants used in a given location (e.g., pesticides, herbicides, cleaning agents, petroleum byproducts);
- ▶ the contaminants deposited on paved surfaces; and

- ▶ the amount of rainfall.

Sediment sources include roads and parking lots, as well as destabilized landscape areas, streambanks, unprotected slopes, and disturbed areas where vegetation has been removed during the grading process. Sediments, in addition to being contaminants in their own right, transport other contaminants, such as trace metals, nutrients, and hydrocarbons that adsorb to suspended sediment particles. Sources of oil and grease compounds include motor vehicles, food service establishments, and fueling stations.

### **Existing Regulations to Address Erosion, Sedimentation, and Water Quality**

Several existing regulations would apply to projects accommodated under the 2035 General Plan and would reduce or avoid impacts related to erosion, sedimentation, and water quality.

Chapter 15.12 of the Suisun City Municipal Code addresses erosion and sediment control under the City Grading and Erosion Control Ordinance. Project applicants must obtain a grading permit that includes a site runoff control plan, which must include erosion and dust control measures. In addition, projects within 300 feet of any creek or the Suisun Marsh must submit a detailed plan of the proposed development to the City for approval. The plan must include, but is not limited to, the following information:

- ▶ Volume and extent of grading, filling and excavation.
- ▶ Placement of drainage outflows. Such outflows and associated drainage facilities shall be designed so as to eliminate or minimize increases in the rate and amount of stormwater discharge.
- ▶ Type and amount of native vegetation. If any is to be removed, the type and method of replacement.

The City addresses stormwater requirements for development projects through the *Fairfield-Suisun Urban Runoff Management Program* (FSURMP) (Cities of Fairfield and Suisun City 2006). Development projects in the City must comply with the NPDES permit issued to the FSURMP by the San Francisco Bay RWQCB. In order to reduce the transport of sediments and pollutants in stormwater, all projects must incorporate best management practices (BMPs) during construction activities. In addition, all projects must incorporate site design and source control measures during project operation. For those projects that consist of redevelopment, if more than 50% of the existing impervious surface area would be replaced or added, the entire project site is subject to site design, source control, and BMP requirements. The FSURMP requires that all projects implement a Stormwater Pollution Prevention Plan (SWPPP), including those projects that disturb less than 1 acre of land (although the SWPPP for such projects may be abbreviated). The SWPPP must include a site map and a description of construction activities, and must identify the BMPs that will be employed to prevent soil erosion and discharge of other construction-related pollutants.

Causes of stormwater pollution from construction sites are poor erosion and sediment control, poor construction site management practices, and poor material management. Examples of the types of construction-related BMPs that could be used at construction sites within the City include:

- ▶ control of exposed soil through slope stabilization, and/or
- ▶ control of sediment in runoff through the use of sand bags, straw wattles, or desilting basins.

As suggested in the FSURMP, permanent long-term treatment of stormwater runoff may include detention basins, water quality wetlands, vegetated swales, bioretention, filters and solid separators. Specific design and engineering guidance is also provided. The FSURMP recommends the use of the following specific operational source-control measures, among others:

- ▶ Significant natural features and resources on site such as undisturbed forest area setbacks, easements, trees, steep slopes, erosive soils, wetlands or riparian areas shall be identified within the area to be developed and protected during construction and during future use of the site.
- ▶ Site layout shall conform to natural landforms on-site. Buildings shall be located to utilize natural drainage systems as much as possible and avoid unnecessary disturbance of vegetation and soils. Development on unstable or easily erodible soils shall be avoided due to their greater erosion potential.
- ▶ Directly connected impervious surfaces shall be minimized. Runoff from impervious areas shall be channeled to pervious areas (e.g., park strips, vegetated planters) where possible prior to discharge to the storm drain.
- ▶ Site permeability shall be maximized by clustering buildings, reducing building footprints, minimizing impervious surfaces, and paving with permeable materials where feasible.
- ▶ The project shall cluster structures and incorporate smaller lot sizes where feasible to reduce overall impervious surface coverage and provide more undisturbed open space, for protection of water resources.

The FSURMP also contains specific provisions related to control of stormwater quality that are applicable to the following topic areas:

- ▶ Reduction of contaminated runoff from illegal dumping to storm drain inlets and waterways
- ▶ Installation of interior floor drains
- ▶ Drainage in parking garages
- ▶ Application of pesticides and fertilizers
- ▶ Discharges from pools, spas, and fountains
- ▶ Cleaning of food service equipment
- ▶ Refuse areas
- ▶ Outdoor process equipment areas
- ▶ Storage of outdoor equipment and materials
- ▶ Cleaning of vehicles and equipment
- ▶ Repair and maintenance of vehicle and equipment
- ▶ Fuel dispensing areas
- ▶ Loading docks
- ▶ Discharge of test water from fire sprinklers
- ▶ Miscellaneous drain or wash water
- ▶ Streets and sidewalks
- ▶ Parking lots
- ▶ Landscaping
- ▶ Riparian areas

Finally, the FSURMP requires monitoring and annual reporting on the effectiveness of stormwater quality control mechanisms (and adjustments to the control mechanisms if necessary) over the life of each project through maintenance agreements between the developer and the City.

Projects that disturb more than 1 acre of land must comply with the requirements in the SWRCB *General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities* (Order 2009-0009-Division of Water Quality). The SWRCB general permit contains a numeric, two-part, risk-based analysis process. It also identifies the need to address changes in the hydrograph, defined as hydrograph modification or hydromodification, which could result from urbanization of a watershed, and requires low impact development (LID) controls to more closely mimic the pre-developed hydrologic condition.

### **Existing Regulations to Address Discharge of Treated Wastewater**

The City does not allow the use of on-site wastewater treatment systems (OWTS), otherwise known as on-site septic tank and leach field systems. All development is required to connect to the regional sewer system.

The Fairfield Suisun Sewer District (FSSD) operates the Fairfield-Suisun Wastewater Treatment Plant (WWTP) and the FSSD collection system under Order No. R2-2009-0039 and NPDES Permit No. CA0038024. The permit includes stringent effluent limits for various pollutants of concern including copper, cyanide, chlorodibromomethane, and dichlorobromomethane. The WWTP provides a tertiary level of treatment.

Treated wastewater is discharged first into the Boynton Slough and, from there, is periodically released into privately owned and managed duck ponds in the Suisun Marsh. Discharges into the duck ponds are regulated by waste discharge requirements (WDRs) issued by the San Francisco Bay RWQCB. The timing and frequency of the discharges are determined by the California Department of Fish and Game and the Solano Irrigation District. In addition, approximately 10% of the treated effluent is recycled for use in agricultural irrigation, landscape irrigation, and industrial cooling. Treated wastewater discharged from the WWTP complies with the water quality goals of the *Water Quality Control Plan for the San Francisco Bay Basin* (the Basin Plan), the State Implementation Plan (SIP), and the California Toxics Rule (along with other Federal and State requirements) through adherence to regulations contained in the WDRs and the NPDES permit. (San Francisco Bay RWQCB 2003).

Compliance with existing regulations would reduce impacts related to erosion and water quality to a **less-than-significant** level.

### **Relevant Policies and Programs of the 2035 General Plan**

#### ***Water Quality Protection***

- ▶ **Policy PHS-5.1:** New development shall incorporate site design, source control, and treatment measures to keep pollutants out of stormwater during construction and operational phases, consistent with City and Fairfield-Suisun Urban Runoff Management Program standards.
- ▶ **Policy PHS-5.2:** New development shall incorporate low impact development (LID) strategies, such as rain gardens, filter strips, swales, and other natural drainage strategies, to the greatest extent feasible, in order to reduce stormwater runoff levels, improve infiltration to replenish groundwater, reduce localized flooding, and reduce pollutants close to their source.

- ▶ **Policy PHS-5.3:** New development should minimize the land area covered with driveways, loading docks, and parking lots in order to reduce stormwater flows, reduce pollutants in urban runoff, recharge groundwater, and reduce flooding.
- ▶ **Policy PHS-5.4:** New development should use permeable surfaces for hardscape, where feasible.
- ▶ **Policy PHS-5.5:** Industrial land uses with high wastewater generation rates or high effluent pollutant concentrations may be required by the Fairfield Suisun Sewer District to install equipment for pre-treatment of wastewater.
- ▶ **Policy PHS-5.6:** The City will consult with appropriate regional, state, and federal agencies to monitor water quality and address local sources of groundwater and soil contamination, including possible contamination from activities at Travis Air Force Base, underground storage tanks, septic tanks, and industrial uses, as necessary, to achieve state and federal water quality standards.
- ▶ **Policy PHS-5.7:** Septic systems are not allowed in new developments, which must connect to the regional sewer system for treatment of wastewater.
- ▶ **Program PHS-5.1:** Stormwater Development Requirements. The City will review new developments for applicable requirements of the National Pollutant Discharge Elimination System (NPDES) permit. New developments must use best management practices (BMPs) during construction to reduce water quality impacts from construction work and during project operation to mitigate post-construction impacts to water quality. Long-term operational water quality impacts must be reduced using site design and source control measures to help keep pollutants out of stormwater. The City will encourage proactive measures that are a part of site planning and design that would reduce stormwater pollution as a priority over mitigation measures applied to projects after they are designed. Some of the many ways to reduce water quality impacts through site design include: reduce impervious surfaces; drain rooftop downspouts to lawns or other landscaping; and use landscaping as a storm drainage and treatment feature for paved surfaces.

### ***Biological Resources***

- ▶ **Policy OSC-1.2:** New development in areas with riparian habitats, and stands of mature trees shall preserve and incorporate those features into project planning and design, to the greatest extent feasible.
- ▶ **Policy OSC-1.3:** The City will protect and preserve natural watercourses and drainage channels, particularly along open space areas, to the maximum extent feasible.
- ▶ **Policy OSC-1.4:** New development shall preserve and incorporate into site planning natural drainages that could support riparian habitat to the greatest extent feasible.
- ▶ **Policy OSC-1.8:** Roads, water lines, sewer lines, drainage facilities, and other public facilities constructed to serve development shall be located and designed to avoid substantial impacts to stream courses, associated riparian areas, and wetlands, to the extent.
- ▶ **Policy OSC-1.9:** The City will support cooperative restoration, development, and promotion of natural resources with other public agencies with an interest in Suisun City's water and wildlife assets.

- ▶ **Policy OSC-1.10:** In collaboration with other service providers and resource agencies, the City will seek funding to maintain and expand the system of existing parks and recreational open spaces, in part, to provide habitat for wildlife.
- ▶ **Program OSC-1.2: Wetlands and Riparian Buffers.** Through review of proposed private and public projects near wetlands and riparian areas, the City will require buffering to protect these important habitats. Setbacks will be included as a part of conditions of approval for proposed projects. The depth of the setback shall be determined based upon site-specific conditions, habitat requirements of species that may use the setbacks, and communication with appropriate trustee and responsible agencies, such as the California Department of Fish & Wildlife, the U.S. Army Corps of Engineers, and the U.S. Fish and Wildlife Service. Depending on the vegetation type, ongoing management of buffers may be necessary to address invasive species, human disturbance, and to sustain habitat and water quality functions. Buffers should be subject to a permanent covenant, such as a conservation easement, and shall include an ongoing maintenance agreement with a land trust, such as the Solano Land Trust, or other qualified nonprofit conservation organization. Low-impact recreation could be allowed in buffer areas so long as impacts to these sensitive habitats are avoided or fully mitigated using design features to avoid indirect impacts, fencing and/or signage to exclude public access in environmentally sensitive areas, siting recreational amenities away from sensitive habitats at the outside edge of the buffer, and implementing best management practices. Human and pet disturbance in sensitive habitat areas should be discouraged as a part of buffer and project design.

### ***Suisun Marsh***

- ▶ **Policy OSC-3.4:** New development shall control the movement of debris and sediment, and the rate and dispersal of runoff before drainage into watercourses and Suisun Marsh through the incorporation of erosion control measures.
- ▶ **Policy OSC-3.5:** New development adjacent to watercourses, Suisun Slough, and Suisun Marsh shall include buffer areas, as needed, to avoid flood hazards, protect water quality, and preserve habitat for wildlife.
- ▶ **Policy OSC-3.6:** The City will implement relevant policies of the Suisun Marsh Protection Plan to aid in protecting and restoring tidal marsh lands.
- ▶ **Policy OSC-4.4:** The City will require measures in areas adjacent to the Suisun Marsh to ensure against adverse effects related to urban runoff and physical access to the Marsh.

### ***Water Supply***

- ▶ **Policy OSC-7.1:** The City will participate on ongoing water supply planning with Solano County Water Agency, Solano Irrigation District, and other local jurisdictions.
- ▶ **Policy OSC-7.5:** The City will encourage the use of recycled water for appropriate use, including, but not limited to, outdoor irrigation, toilet flushing, fire hydrants, and commercial and industrial processes.
- ▶ **Policy OSC-7.6:** The City will support Fairfield-Suisun Sewer District efforts to explore the feasibility of using treated wastewater for irrigation in parks, landscaped areas, and other appropriate locations.

- **Policy OSC-7.7:** The City will use climate-appropriate landscaping in new parks and landscaping within rights-of-way in order to reduce water demand and ongoing maintenance costs.
- **Policy OSC-7.8:** New development shall incorporate climate-appropriate landscaping to reduce water demand and ongoing maintenance costs.

## Conclusion

With adoption and implementation of 2035 General Plan policies and programs, combined with existing land use, stormwater, grading, and erosion control regulations, this impact would be **less than significant** because projects would be designed to incorporate BMPs during construction and source-control measures during operation to would reduce erosion and protect water quality to the maximum extent feasible.

## Mitigation Measure

No mitigation is required.

**IMPACT 3.9-2** **Increased Flooding and Hydromodification from Increased Stormwater Runoff.** *Land use change accommodated under the 2035 General Plan would increase the amount of impervious surfaces, thereby increasing surface runoff. This increase in surface runoff would result in an increase in both the total volume and the peak discharge rate of stormwater runoff, and therefore could result in greater potential for hydromodification and on- and off-site flooding. However, with implementation of federal, state, and local stormwater requirements, this impact would be **less than significant**.*

Buildout contemplated under the 2035 General Plan would include new development on undeveloped properties, additional structures developed on already-developed properties, demolition of existing structures with replacement uses, and infill development on currently vacant properties, along with required infrastructure and services. Each type of land use change would each contribute different relative amounts of stormwater runoff corresponding to the percentage of impervious surface added. The relative amount of impervious surface associated with development would range from low (e.g., wetlands/open space) to high (e.g., large commercial projects with large parking areas, major roads, etc.). Expansion of the City's impervious surfaces would increase the peak discharge rate of stormwater runoff and could result in on-site or downstream flooding.

Potential changes to the hydrologic and geomorphic processes in a watershed as a result of impervious surfaces and drainage infrastructure from urbanization include increased runoff volumes and dry weather flows, increased frequency and number of runoff events, increased long-term cumulative duration of flows, as well as increased peak flows. These changes are referred to as "hydromodification." Hydromodification intensifies the erosion and sediment transport process, and often leads to changes in stream channel geometry, streambed and streambank properties, which can result in degradation and loss of riparian habitat, and downgradient sediment deposition causing flooding problems.

## Existing Regulations to Reduce Flooding from Stormwater Runoff

Section 15.12.080 of the Suisun City Municipal Code requires preparation and approval of a runoff control plan. This plan must indicate the calculated runoff from a development site under natural conditions and after development has been completed, using City drainage standards. The plan must also demonstrate that peak runoff

from the site will not increase after development and must include all necessary measures to ensure this result, to the satisfaction of the City Engineer.

General requirements for containment of stormwater runoff from development are provided in Chapter 4 of the City's *Engineering Standards and Specifications* (standards) (Suisun City 1996). These standards are intended to ensure that runoff from storms up to the 100-year event are appropriately conveyed through storm facilities and discharged such that public and private development are protected from flood hazards. Key provisions within the standards include:

- ▶ All proposed storm drain facilities must include provisions that accommodate runoff from future upstream development.
- ▶ No development may discharge stormwater at a rate that exceeds the capacity of any part of the existing downstream drainage system.
- ▶ All flood waters within a public right-of-way (e.g., roadways) must be contained at all times through methods such as grading or levees, as acceptable to the City Engineer.
- ▶ All development must be designed so that flood waters do not exceed a depth of 0.5 feet.

### Existing Regulations to Address Hydromodification

The City is required to conform to the conditions stated in the San Francisco Bay RWQCB permit for the discharge of regional municipal stormwater runoff (MS4s) (Order R2-2009-0074 NPDES Permit No. CAS612008). Permit Attachment 3 Provision C.3.g contains a list of the requirements for analysis and management of hydromodification from development in the City, as follows:

- ▶ Standard design control criteria
  - Range of flows to be controlled
  - Allowable deviation between pre-project and post-project flow duration
  - Allowable flow rate
  - Standard modeling type
- ▶ Deviation from standard design control criteria
- ▶ Record keeping
- ▶ Discharge into upstream reaches of Laurel or Ledge wood Creeks

### Conclusion

With implementation of current runoff control and hydromodification regulations, this impact would be **less than significant** because post-development runoff (including 100-year flood flows) would not exceed pre-development runoff, and projects must include standard design criteria to control hydromodification to the maximum extent feasible.

### Mitigation Measure

No mitigation is required.

**IMPACT**     **Flood Hazards from Placement of Structures within a 100-Year Floodplain or from Levee Failure.** *Land use change accommodated under the 2035 General Plan could include residential or commercial structures in floodplains, thereby exposing people and structures to flood hazards. Similar exposure could occur in areas subject to flooding because of failure of levees in and near Suisun Marsh. The impact is considered **potentially significant**.*

**3.9-3**

A 100-year floodplain, as mapped by FEMA, exists to the north of the City. However, the elevated embankment of the Union Pacific Railroad tracks, which bisects the City in a northeast to southwest direction, channels these 100-year-flood flows to the southwest and out into Suisun Bay, thereby protecting development in the northern part of the Planning Area. The 100-year floodplain has also been mapped along McCoy Creek, Laurel Creek, Ledgewood Creek, the Suisun Drainage Canal, and within and adjacent to Suisun Marsh. This includes the entire southwest portion of the Planning Area (including the Downtown Waterfront Area). FEMA has also mapped the 500-year floodplain along McCoy Creek and in Suisun Marsh.

There are over 200 miles of levees in the Suisun Marsh. However, only about 20 miles of these levees along Suisun, Grizzly, and Honker Bays (authorized through AB 360) receive public funding. DWR is authorized under AB 360 to provide financial assistance to reclamation districts in the Sacramento-San Joaquin River Delta for levee maintenance and repair, provided that all habitat impacts associated with levee improvements are mitigated.

The Planning Area is not located within the area covered by the Central Valley Flood Protection Plan (California Department of Water Resources [DWR] 2010), and therefore mapping to determine the presence or absence of a 200-year floodplain pursuant is not required.<sup>1</sup>

Scientists surmise that large portions of land within the Suisun Marsh were submerged daily by tides prior to the early 1800s. Flood waters from the Sacramento and San Joaquin Rivers likely covered most of the marsh during the winter and spring and provided freshwater in the channels. Urban development and subsequent conversion of portions of Suisun Marsh to upland habitat began on a small scale in the 1850s by individuals who constructed low sod levees. Continued drainage of marsh land and construction of dikes occurred from the 1860s through 1920. During these marsh reclamation activities, beef and dairy cattle were pastured in the higher areas of the marsh. However, many of these agricultural endeavors were unsuccessful because of poor drainage and the accumulation of salts in the soil. Most of these agricultural areas have been converted to private duck clubs or State waterfowl management areas (U.S. Fish and Wildlife Service [USFWS] 1981).

Suisun Marsh is managed for preservation of wildlife and control of salinity in the water is monitored by a number of different agencies including DWR, California Department of Fish and Wildlife (CDFW), USFWS, San Francisco Bay Development and Conservation Commission (BCDC), and Suisun Resource Conservation District (SRCD) through implementation of the *Suisun Marsh Habitat Management, Preservation, and Restoration Plan* (SMP). Because of current restrictions preventing dredging from sloughs and constraints on importing materials, landowners in Suisun Marsh have maintained their levees using primarily material from ditch cleaning or pond bottom grading for more than a decade—a practice that increases subsidence and potentially weakens the existing levee foundations. As levees subside, the amount of available freeboard is reduced, which increases the potential for levee overtopping. Wave action and sea level rise can also reduce the amount of freeboard.

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<sup>1</sup> Sections 65007, 65302.9, 65860.1, 65865.5, 65962, and 66474.5 of the Government Code, Section 50465 of the Health and Safety Code, and Chapter 4 (commencing with Section 8200) to Part 1 of, and to add Part 6 (commencing with Section 9600) to, Division 5 of the Water Code address what is most commonly known as “Senate Bill 5” requirements.

In Suisun Marsh, the most frequent historical cause of levee failure has been from overtopping of the levees. Historically, levees in Suisun Marsh were not constructed to an engineered standard nor were they been maintained to the standard of an urban or agricultural levee. Furthermore, maintenance of the levees in Suisun Marsh is limited primarily to the use of material from within managed wetlands (or from very limited soil importation) due to regulatory constraints (U.S. Bureau of Reclamation [USBR], USFWS, and DFG 2010).

### **Existing Regulation of Floodplains**

The Federal Emergency Management Agency (FEMA) administers the National Flood Insurance Program (NFIP) to provide subsidized flood insurance to communities that comply with FEMA regulations to limit development in floodplains. FEMA also issues flood insurance rate maps (FIRMs) that identify which land areas are subject to flooding. These maps provide flood information and identify flood hazard zones in the community. The design standard for flood protection is established by FEMA. The minimum level of flood protection for new development is the 1-in-100 Annual Exceedance Probability, defined as a flood that has an average frequency of occurrence on the order of once in 100 years (although such a flood may occur in any given year).

As a participant in the NFIP, Suisun City must adhere to the components of the FEMA *Floodplain Management Requirements* (2010), which are intended to ensure that (1) new development does not cause increased flooding elsewhere, and (2) new buildings will be protected from the base flood. The *Floodplain Management Requirements* contain a comprehensive list of the types of flood maps to be used, permitting requirements, restrictions within different flood zones, and procedures for submittal of information to FEMA for review and approval (FEMA 2010).

As outlined in the Public Health and Safety Element (Policy PHS-4.6 and Program PHS-4.2, for example), the City recognizes the importance of adaptation strategies associated with the possible impacts of climate change, most notably the potential for sea level rise. Strategies include, but are not limited to, building moratoriums in potentially affected areas, the construction of raised foundations in new development, and the construction of levees and dikes to prevent increased sea levels from affecting the City, including levees in the western portion of the Planning Area.

### **Existing Programs Related to Levee Failure**

One of the purposes of the SMP (the Suisun Marsh Habitat Management, Preservation, and Restoration Plan) is to “Maintain and improve the Suisun Marsh levee system integrity to protect property, infrastructure, and wildlife habitats from catastrophic flooding” (USBR, USFWS, and DFG 2010). The SMP incorporates the recommendations made by CALFED’s Suisun Marsh Levee Investigation Team, which include, among others:

- ▶ establishment of an interim plan that emphasizes development of an emergency response program,
- ▶ establishment of a base-level Marsh-wide maintenance program,
- ▶ establishment of a program for enhanced protection that is modeled on the current special flood control projects program and the special projects program,
- ▶ development of a criteria and evaluation methodology for acceptable parcel characteristics,

- ▶ establishment of an application of focused research toward an engineering strategy for levee breaching and maintenance,
- ▶ development of methods to obtain more accurate topographical data for Suisun Marsh for planning purposes,
- ▶ examination of sedimentation processes in the Marsh to explore possible means of creating sediment accretions throughout Suisun Marsh,
- ▶ the addition of Suisun Marsh levees to the CALFED Levee Program Risk Assessment and Risk Management Strategy,
- ▶ funding for an emergency response element to address Suisun Marsh levees, and
- ▶ structuring funding for improvements to Suisun Marsh levees to avoid competition with the already strained resources for the maintenance of levees currently included in the Delta Subventions Program.

The Suisun Resource Conservation District's *Management Program to Preserve, Protect, and Enhance the Plant and Wildlife Communities within the Primary Management Zone of the Suisun Marsh* was developed in 1980. This Program includes minimum standards for levee design in Suisun Marsh. Levees constructed or improved as part of the SMP would adhere to those standards, namely: (1) a crown width of 12 feet, (2) 2:1 side slopes, and (3) "necessary freeboard" above the 100-year flood (i.e., 2 feet of freeboard under normal conditions and 3 feet of freeboard in flood-prone areas). The SMP includes a program to improve levee maintenance. This would be accomplished by increasing slope stability and reducing erosion, overtopping, and failure through placement of riprap or alternative bank protection measures, as well as modifying the heights of exterior levees, which would require dredging and importation of appropriate levee materials. Work could occur on the waterside slope, landside slope, or both. Improved levee stability would reduce the risk of catastrophic levee failure (USBR, USFWS, and DFG 2010).

In addition to the above, the Solano County Office of Emergency Services (OES) provides for the development, establishment, and maintenance of programs and procedures to help protect the lives and property of Solano County residents from the effects of natural or human-caused disasters, including floods from levee failures. The County OES works with individual Suisun City departments on disaster exercises and evacuation preparations. Additionally, the County OES conducts emergency preparedness training and awareness presentations for citizens and various organizations so that they will better understand what they should do before, during, and after a disaster or major emergency, including flooding.

The impact is considered **potentially significant**.

### **Relevant Policies and Programs of the 2035 General Plan**

- ▶ **Policy PHS-11.1:** The City will coordinate with Solano County Water Agency, the California Department of Water Resources, the San Francisco Bay Conservation and Development Commission, and others to plan, construct, repair, and maintain flood control facilities protecting Suisun City that are capable of protecting existing and proposed structures from flooding, in accordance with state law.
- ▶ **Policy PHS-11.5:** The City will require that structures intended for human occupancy within the 100-year floodplain are appropriately elevated and flood proofed for the profile of a 100-year flood event. Flood

proofing may include a combination of structural and nonstructural additions, changes, or adjustments to structures that reduce or eliminate flood damage to real estate or improved real property, water and sanitary facilities, structures, and their contents.

- ▶ **Policy PHS-11.6:** The City will require new developments within a 100-year floodplain to demonstrate that such development will not result in an increase to downstream flooding.
- ▶ **Policy PHS-4.7:** The City will support Solano County's Sea Level Rise Strategic Program, as feasible.
- ▶ **Program PHS-4.2. Coordinate with Regional Adaptation Strategy.** The City will seek funding to collaborate with other local, regional, and state agencies to assess local vulnerability to climate change and develop strategies to adapt to the effects of climate change and promote the other objectives of the 2035 General Plan. The vulnerability assessment would generally include identification of the primary climate change effects; the local sensitivity to these effects; level of community resiliency to climate change effects; and estimates of the timing of climate change effects on Suisun City. Development of an adaptation strategy would generally be anticipated to include a prioritization of adaptive needs based on the vulnerability assessment; identification of strategies for priority adaptation needs; consider potential strategies relative to costs, benefits, co-benefits, feasibility, and other relevant local factors; and phasing and funding approach for the strategies. The City anticipates that adaptation strategies – particularly those that are designed to protect existing structures, facilities, and infrastructure – would require regional cooperation and funding. The City will prioritize those areas in the City with properties that contain development of special value and that merit special protection; and identify areas where hazardous substances could be released into the environment as a result of sea level rise. The City will investigate and recommend sea level rise management actions, such as the construction of levees or sea walls to protect areas that merit special protection, or plans to relocate buildings and infrastructure that could become inundated. The City will update land use designations and development regulations, as appropriate, in order to protect public safety, welfare, and health. The City will adopt construction standards that account for flood hazards for public roads and bridges used as evacuation routes.

## Conclusion

The City has developed 2035 General Plan policies and programs that, combined with flood control regulations and levee improvements included in the SMP, would reduce the exposure of people or structures to flood hazards resulting from development under the 2035 General Plan.

However, as of the writing of this document, there is no defined schedule nor are there agreed-upon funding mechanisms to implement the levee improvements that would be addressed by the SMP. Furthermore, implementation of the SMP lies outside the jurisdiction of Suisun City and is therefore under the control of other lead agencies (i.e., the “Suisun Principal Agencies,” which consists of a diverse group of organizations such as U.S. Bureau of Reclamation, USFWS, DWR, DFG, and CALFED). Therefore, even with implementation of the 2035 General Plan policies and programs, the potential for flooding from failure of a Delta/Suisun Marsh levee or from placement of structures within a 100-year floodplain would remain. Therefore, this impact is **significant**.

## Mitigation Measure

No additional feasible mitigation is available to reduce this impact beyond 2035 General Plan policies and programs. This impact would remain **significant and unavoidable** because the potential for flooding from failure of a Delta/Suisun Marsh levee and placement of structures within a 100-year floodplain would remain, even with implementation of the policies in the 2035 General Plan.

**IMPACT 3.9-4**     **Potential for Failure of a Dam.** *Of the 18 dams in Solano County, the State OES has identified 10 where dam inundation has the potential to cause human injury or loss of life, 2 of which may result in damage to Suisun City. In the unlikely event of dam failure, people and structures are exposed to inundation, and death, injury, or loss of property could result. 2035 General Plan policies and programs, combined with other relevant state and local regulations, would minimize the potential for effects on the Planning Area from dam failure. This impact is considered less than significant.*

Dam inundation occurs when a dam is not structurally sound or is unable to withstand damages resulting from seismic activity or overtopping. The degree and rapidity of dam failure depends on the dam's structural characteristics. Of the 18 dams in Solano County, the state OES has identified 10 where dam inundation has the potential to cause human injury or loss of life. For security reasons, maps showing dam inundation areas are not generally made available to the public. However, based on a review of the Dam Failure Inundation Maps prepared by the Association of Bay Area Governments (ABAG 1995), the southwestern portion of the Planning Area could be subject to potential inundation from failure of two dams. These two dams are located at Lake Curry (approximately 6 miles northwest of Suisun City), and at Pennsylvania Creek (approximately 1.75 miles northwest of the Suisun City).

## Existing Regulations to Address Dam Failure

The California Water Code designates the regulatory Dam Safety Program to DWR, Division of Safety of Dams (DSOD). The principal goal of this program is to avoid dam failure and thus prevent loss of life and destruction of property. The DSOD reviews plans and specifications for the construction of new dams and for the enlargement, alteration, repair, or removal of existing dams, and must grant written approval before the owner can proceed with construction. Professional engineers and geologists from the DSOD evaluate each project, investigate proposed sites, and check available construction materials. Dams under DSOD jurisdiction include all artificial barriers (together with appurtenant works) that are 25 feet or more in height or have an impounding capacity of 50 acre-feet or more. As a result of implementation of the DSOD program, inundation from dam failure is an extremely unlikely event.

Dam inundation mapping procedures (Title 19, Section 2575 of the California Code of Regulations [19 CCR Section 2575]) are required by the state OES for all dams where human life is potentially endangered by dam flooding inundation. Dam owners are responsible for obtaining recent hydrologic, meteorological, and topological data as well as land surveys denoting the floodplain, to be utilized for the preparation of a dam inundation map. This information is to be submitted to OES 60 days before the filling of any dam.

In addition, as described above, the Solano County OES provides for the development, establishment, and maintenance of programs and procedures to help protect the lives and property of Solano County residents from the effects of natural or human-caused disasters, including floods from dam failures. The County OES works with individual Suisun City departments on disaster exercises and evacuation preparations. Additionally, the County

OES conducts emergency preparedness training and awareness presentations for citizens and various organizations so that they will better understand what they should do before, during, and after a disaster or major emergency, including flooding from failure of a dam.

Compliance with existing regulations would reduce impacts related to dam failure to a **less-than-significant** level.

### **Relevant Policies and Programs of the 2035 General Plan**

- ▶ **Policy PHS-15.1:** The City will use the Local Hazard Mitigation Plan to prepare for immediate response, adaptation, long-term recovery, and planning for future community resiliency in the event of a disaster.
- ▶ **Policy PHS-15.2:** The City will review development and redevelopment projects, plans, and public investment decisions to ensure consistency with the Local Hazard Mitigation Plan.
- ▶ **Policy PHS-15.3:** The City will provide public access to emergency response procedures in such locations as City Hall, Suisun City Library, and public schools and will otherwise promote awareness of emergency response and evacuation plans.
- ▶ **Policy PHS-15.4:** The City's development and improvement standards will require a circulation system with multiple access points, adequate provision for emergency equipment access, and evacuation egress. New and redevelopment projects will be checked by the City to ensure proper emergency access is provided.
- ▶ **Policy PHS-15.5.** The City shall designate evacuation routes in the event of a large-scale or fire or other citywide emergency requiring the evacuation of a substantial portion of the City's residents.
- ▶ **Program PHS-15.2: Emergency Access and Evacuation Routes.** In the event of serious emergency, the following major routes are designated for evacuation of the population: Cordelia Road; Main Street to SR 12; Driftwood Drive - Marina Boulevard to SR 12; SR 12; Sunset Avenue; Railroad Avenue; Walters Road; and Bella Vista Drive. These streets provide for alternate major routes east, west, and north out of the community, depending on the nature of the emergency.

### **Conclusion**

The City's 2035 General Plan policies and programs, combined with other relevant state regulations, would minimize the potential for effects on the Planning Area from inundation as a result of dam failure because DSOD regulations are intended to ensure the prevention of dam failure to the maximum extent feasible and the City would designate and provide information to the public on evacuation routes. Therefore, this impact is considered **less than significant**.

### **Mitigation Measure**

No mitigation is required.

**IMPACT**     **Interference with Groundwater Recharge.** *Land use change accommodated under the 2035 General Plan would result in additional impervious surfaces, which could reduce the amount of groundwater recharge. Reductions in groundwater recharge could, in turn, affect the yield of hydrologically connected wells. However, a substantial reduction in groundwater recharge is not anticipated. With compliance with existing regulations and implementation of 2035 General Plan policies, this impact is considered **less than significant**.*

**3.9-5**

Based on a review of USDA Soil Survey data (Natural Resource Conservation Service [NRCS] 2012), soil types in the Planning Area consist of clays, clay loams, and silty clay loams. Soil types with a high clay content generally have low permeability, meaning that water percolation through the soil is restricted. Most of the soil types in the Planning Area have a permeability rating of moderately low (NRCS 2012). Most of the natural groundwater recharge in the Planning Area occurs in areas located along active stream channels.

Water supply for Suisun City is provided through the Suisun-Solano Water Authority (SSWA). All of the water provided for use in the City is surface water. Groundwater is not considered a viable source for water supply because of tidal flows that result in a higher-than-normal salinity content. Treatment to reduce the salinity content of the groundwater for use as potable water is prohibitively expensive.

Land use change accommodated under the 2035 General Plan would result in construction of additional impervious surfaces (e.g., parking lots, rooftops, driveways, sidewalks, and roads) that would reduce the amount of water percolating through the soil to recharge the groundwater aquifer. Some of this land use change would involve recreational uses and other uses that would not add a large amount of impervious surface in the area. Other developments might propose large surface parking areas or might occur in compact development settings and involve relatively higher percentages of impervious surface.

Policies and programs in the 2035 General Plan directs projects to incorporate natural drainage into site plans, where feasible, which would help preserve the groundwater recharge potential of certain areas. In other areas, where there are not existing drainages on-site, and where higher density or higher intensity development is anticipated, the groundwater recharge potential may be diminished.

According to the current *Urban Water Management Plan*, SSWA has no plans to use recycled water (Maddaus Water Management 2011). However, as a part of the 2035 General Plan, the City will encourage the use of recycled water for appropriate use, including, but not limited to, outdoor irrigation, toilet flushing, fire hydrants, and commercial and industrial processes and will support Fairfield-Suisun Sewer District efforts to explore the feasibility of using treated wastewater for irrigation in parks, landscaped areas, and other appropriate locations.

As discussed previously, approximately 10% of the tertiary-treated effluent from the Fairfield-Suisun WWTP is recycled for use in agricultural irrigation (duck ponds in Suisun Marsh), landscape irrigation (a turf farm adjacent to the WWTP), and industrial cooling. Wastewater that is treated to a tertiary level—filtration and disinfection (Title 22, unrestricted use)—may be used for nonpotable uses, such as landscape irrigation at parks, schools, and rights-of-way. Currently there is no reclaimed water use, nor are there imminent plans to do so, within the SSWA service area because there are no pipelines to deliver recycled water from the WWTP to the SSWA service area. According to SSWA, the use of recycled water in the City has been studied and documented in the *Central Solano Dual Water Systems Master Plan* (Maddaus Water Management 2011, Appendix E). A system of transmission lines, pump stations, and storage tanks would be required in order to provide recycled water, at an estimated 2011 cost of \$8.37 million. Given the current economic situation, SSWA considers this cost to be infeasible for the

foreseeable future. The SSWA operates a regional program that offers financial incentives for customers to upgrade irrigation systems, plumbing fixtures, and water-using appliances such as washing machines and high-efficiency toilets. SSWA also offers free large landscape site surveys for accounts with dedicated irrigation meters. The surveys include an evaluation of water use and irrigation system performance, with recommendations given to improve irrigation efficiency.

### **Existing Regulations Related to Groundwater Recharge**

Title 20 of the Suisun City Municipal Code was established to promote water-efficient landscaping. For projects with a landscape area greater than 2,500 square feet where a building permit is also required, the ordinance requires submittal of a soil management report (that includes laboratory analysis of various soil factors including the infiltration rate), a landscape plan, irrigation design plan, and grading plan that are geared towards efficient use of water to the City for review and approval. A few of the requirements contained in the ordinance that promote groundwater recharge are listed below.

- ▶ Plants shall be selected and planted appropriately based upon their adaptability to the climatic, geologic, and topographical conditions of the project site.
- ▶ Identify location and installation details of any applicable stormwater best management practices that encourage on-site retention and infiltration of stormwater. Stormwater best management practices are encouraged in the landscape design plan and examples include, but are not limited to:
  - Infiltration beds, swales, and basins that allow water to collect and soak into the ground;
  - Constructed wetlands and retention ponds that retain water, handle excess flow, and filter pollutants;
  - Pervious or porous surfaces (e.g., permeable pavers or blocks, pervious or porous concrete, etc.) that minimize runoff.
- ▶ Automatic irrigation controllers utilizing either evapotranspiration or soil moisture sensor data shall be required for irrigation scheduling in all irrigation systems.
- ▶ The irrigation system shall be designed to prevent runoff, low head drainage, overspray, or other similar conditions where irrigation water flows onto non-targeted areas, such as adjacent property, non-irrigated areas, hardscapes, roadways, or structures.
- ▶ Overhead irrigation shall not be permitted within 24 inches of any non-permeable surface.
- ▶ Slopes greater than 25 percent shall not be irrigated with an irrigation system with a precipitation rate exceeding 0.75 inches per hour.
- ▶ To prevent excessive erosion and runoff, it is highly recommended that the project applicants:
  - Grade so that all irrigation and normal rainfall remains within property lines and does not drain onto non-permeable hardscapes,
  - Avoid disruption of natural drainage patterns and undisturbed soil, and

- Avoid soil compaction in landscape areas.
- ▶ Stormwater management practices minimize runoff and increase infiltration which recharges groundwater and improves water quality. Implementing stormwater best management practices into the landscape and grading design plans to minimize runoff and to increase on-site retention and infiltration are encouraged.
- ▶ Rain gardens, cisterns, and other landscape features and practices that increase rainwater capture and create opportunities for infiltration and/or on-site storage are recommended.

Furthermore, many of the construction and operational source-control measures for urban runoff suggested in the FSURMP (discussed previously) would also serve to encourage groundwater recharge at development sites.

Compliance with existing regulations would reduce impacts related to groundwater recharge to a **less-than-significant** level.

## **Relevant Policies of the 2035 General Plan**

### ***Water Supply***

- ▶ **Policy OSC-7.6:** The City will encourage the use of recycled water for appropriate use, including, but not limited to, outdoor irrigation, toilet flushing, fire hydrants, and commercial and industrial processes.
- ▶ **Policy OSC-7.7:** The City will support Fairfield-Suisun Sewer District efforts to explore the feasibility of using treated wastewater for irrigation in parks, landscaped areas, and other appropriate locations.

### ***Water Quality Protection***

- ▶ **Policy PHS-5.1:** New development shall incorporate site design, source control, and treatment measures to keep pollutants out of stormwater during construction and operational phases, consistent with City and Fairfield-Suisun Urban Runoff Management Program standards.
- ▶ **Policy PHS-5.2:** New development shall incorporate low impact development (LID) strategies, such as rain gardens, filter strips, swales, and other natural drainage strategies, to the greatest extent feasible, in order to reduce stormwater runoff levels, improve infiltration to replenish groundwater, reduce localized flooding, and reduce pollutants close to their source.
- ▶ **Policy PHS-5.3:** New development should minimize the land area covered with driveways, loading docks, and parking lots in order to reduce stormwater flows, reduce pollutants in urban runoff, recharge groundwater, and reduce flooding.
- ▶ **Policy PHS-5.4:** New development should use permeable surfaces for hardscape, where feasible.

## **Conclusion**

Soils in the Planning Area generally have low permeability. Most of the natural groundwater recharge in the Planning Area occurs in areas located along active stream channels. Policies in the 2035 General Plan direct projects to incorporate natural drainage into site plans, where feasible, which would help preserve the groundwater recharge potential of certain areas. The City's Land Use and Open Space Diagrams preserve in open

space locations that are most important for groundwater recharge (i.e., waterways). Existing regulations require best management practices, including such features as infiltration beds, swales, and basins that allow water to collect and soak into the ground. Furthermore, many of the construction and operational source-control measures for urban runoff suggested in the FSURMP (discussed previously) would also serve to encourage groundwater recharge at development sites. With implementation of existing regulations and 2035 General Plan policies, the impact is considered **less than significant**.

#### Mitigation Measure

No mitigation is required.

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## 3.10 LAND USE AND PLANNING

### 3.10.1 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

#### METHODOLOGY

Land use changes proposed under the 2035 General Plan were compared to existing land uses to determine if proposed future land uses would affect existing communities within Suisun City. The 2035 General Plan was also compared with other relevant plans, policies, and regulations with jurisdiction over components of the 2035 General Plan, with a focus on inconsistencies that could result in adverse physical effects under CEQA.

#### THRESHOLDS OF SIGNIFICANCE

Based on Appendix G of the State CEQA Guidelines, the proposed project would result in a potentially significant impact on land use and planning if it would:

- ▶ physically disrupt or divide an established community;
- ▶ conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect; or,

Please refer to Section 3.3 of this EIR, “Biological Resources” for a discussion of conflicts with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan.

#### IMPACT ANALYSIS

**IMPACT 3.10-1**     **Disruption and Division of Established Communities.** *Implementation of the 2035 General Plan would not divide or disrupt any existing community. The 2035 General Plan supports reinvestment and infill development, with a focus on vacant and underutilized properties. Existing neighborhoods would not be transformed relative to their existing character. The 2035 General Plan does not identify future transportation facilities or other type of infrastructure that would divide existing developed communities. The 2035 General Plan does not propose other changes that would disrupt or divide existing neighborhoods. This impact would be less than significant.*

The 2035 General Plan provides a framework for the orderly and efficient long-term growth and conservation within Suisun City. The Plan establishes guidelines for managing land use change. General Plan goals that have guided the policy and program content include: maintaining and enhancing quality of life in neighborhoods; promoting revitalization and economic development; encouraging development in Opportunity Areas; accommodating destination land uses; and ensuring orderly and efficient long-term growth.

Most Suisun City neighborhoods are built out or nearly built out, and are not likely to change substantially between present and 2035. The General Plan acknowledges the stability of Suisun City’s neighborhoods, providing policies and programs that encourage reinvestment efforts that maintain and improve the functionality and attractiveness of these areas, without promoting any wholesale change in character. The City’s intent is for development under the General Plan to accommodate a diverse local economy and meet the housing needs of

existing and future residents. Buildout of the General Plan will include a variety of new commercial operations and housing types. The diversity of development opportunities allowed under the General Plan will help make for more “complete neighborhoods” – those that integrate gathering places, shopping, services, parks and other civic amenities. Under the 2035 General Plan, neighborhoods will have better access to commercial and civic services, more places to bike and walk, more places to gather with friends and neighbors, and better access to jobs and public transit.

The Land Use Diagram and Land Use Designations show the location, distribution, and extent of allowable land use within the City’s Planning Area. Preparation of the 2035 General Plan also involved a detailed, parcel-level inventory of existing land uses. This is important in establishing the environmental baseline, against which 2035 General Plan impacts are compared. But, this survey of existing land uses was also used to guide the development of the City’s Land Use Diagram. The Land Use Diagram and Land Use Element allow uses in existing developed areas that reflect and enhance the existing character of these communities. In certain parts of the City, the 2035 General Plan would allow a mixing of different land uses in proximity to one another. For example, the City may allow residential development in areas near retail, commercial service, professional office, public services and facilities. Mixing homes and destinations in proximity and providing opportunities for public transit, walking, and bicycling can reduce air pollution and decrease rates of traffic injuries, cancer, lung and heart disease, obesity, diabetes, and other chronic health conditions. Reduced driving and congestion can improve air quality and reduce the incidence of air pollution-related illnesses (e.g. asthma, cancer, respiratory distress) and reduce the rate of obesity, along with related health risks. Along with policies to allow a mixing of different land uses in proximity to one another are policies and programs that ensure this land use mix does not introduce compatibility issues. As detailed in other sections of this environmental assessment, the 2035 General Plan includes policies to reduce problems with noise exposure, vibration, light and glare, truck traffic, air pollution, and other typical compatibility issues.

Land use change in the Downtown Waterfront Area would be similar to the land uses that occur in this area today. The City anticipates that most land use change would involve infill development of vacant and underutilized properties. The residential section of Downtown Suisun City would not be subject to substantial change in development or character under the 2035 General Plan.

The 2035 General Plan also anticipates land use change in currently undeveloped portions of the Planning Area, where there are no existing established communities.

The Land Use Diagram and Transportation Diagrams were drafted in tandem so that transportation facilities can serve demand generated by local development. The 2035 General Plan does not identify future transportation facilities that would be located within existing developed communities or other changes that could disrupt or divide existing neighborhoods. The extension of Railroad Avenue would occur in an area with commercial service and light industrial uses and vacant properties.

## **Conclusion**

The City’s Land Use Diagram and narrative policies throughout the 2035 General Plan were developed, in part, to ensure that land use change is orderly and considers impacts to existing developed portions of the City. The diagrams, narrative policies, and programs in the 2035 General Plan promote connectivity throughout the City, including promoting infill development of underutilized land, as well as promoting efficient circulation patterns.

Because implementation of the 2035 General Plan would not divide or disrupt existing communities in the Planning Area, this impact would be **less than significant**.

#### Mitigation Measure

No mitigation is required.

**IMPACT 3.10-2**     **Conflict with other Plans.** *Goals, policies, and programs of the 2035 General Plan would not conflict with relevant plans, programs, and regulations with jurisdiction over components of the 2035 General Plan that would cause adverse physical effects under CEQA. Therefore, this impact is considered less than significant.*

The City has analyzed the potential for inconsistencies between the 2035 General Plan and other relevant plans, programs, regulations, and agencies that were adopted to reduce environmental effects. The 2035 General Plan was designed specifically to reduce environmental impacts of long-term growth within Suisun City and to be consistent with relevant plans and policies. Plans, regulations, and programs that are relevant to lands within Planning Area are listed below, along with an evaluation of their consistency with the 2035 General Plan.

#### **Solano County General Plan**

Solano County has jurisdiction over the unincorporated lands within Solano County, which includes lands within the Suisun City's Sphere of Influence, located outside of the incorporated City. The Solano County General Plan includes land use designations for lands located within Suisun City's Planning Area. However, once the Solano County Local Agency Formation Commission (LAFCO) approves annexation of these lands, the City would have jurisdiction, and the Suisun City General Plan land use designations would apply and therefore, there would be no conflict.

Solano County's General Plan Land Use Diagram is generally consistent with Suisun City's 1992 General Plan. The County examined each city's general plan and used the land use designations from these plans, combined with allowable land use for areas under the County's jurisdiction to create the County Land Use Diagram. The County's General Plan was adopted in 2008. With Suisun City's 2035 General Plan Update, the County's Land Use Diagram within the City's Planning Area will be out of date.

Solano County uses municipal service areas (MSAs) to define the area of a city's current and/or future jurisdictional responsibility. The County's policy is that within a MSA, the relevant city must provide services to support developed land uses. As with City land use designations reflected on the County's Land Use Diagram, MSAs are intended to reflect city planned growth areas and city general plans and spheres of influence. The County's policy is that within MSAs, new developments are facilitated and served through city annexation. In areas outside MSAs, the County's policy is that planned land uses are to be maintained or developed under the County's jurisdiction. The County acknowledges that Solano County cities will periodically revise and update their general plans, which would then be followed by revisions to the city spheres of influence. The current MSA shown in the County's General Plan for Suisun City does not include areas within the eastern portion of the City's Sphere of Influence. Following Suisun City's 2035 General Plan Update, the County may need to revise the MSA for Suisun City to correspond with planned growth areas.

## **Solano Local Agency Formation Commission**

Solano LAFCO is responsible for determining whether an annexation is consistent with the LAFCO objectives and policies of ensuring that services would be available to new development within proposed annexation areas; avoiding premature conversion of farmland; and ensuring planned, logical, and orderly patterns of urban growth.

The City's Planning Area does not extend beyond the current Sphere of Influence and the 2035 General Plan would not require any expansion to the City's Sphere of Influence to provide for the planned land uses. Future annexation of lands within Suisun City's Sphere of Influence into the City's jurisdiction would need to be approved by Solano LAFCO. The City is required to coordinate with LAFCO during the annexation process to ensure that municipal services are provided to newly annexed areas.

The 2035 General Plan incorporates policies to ensure consistency with LAFCO policies and procedures. According to the 2035 General Plan, the City will only support annexation in areas that are planned for development and will not induce growth by extending services into areas that are not already planned for development. The City will require analysis and reporting for annexation requests to address Solano LAFCO's policies and procedures. The City will update its Municipal Services Review periodically in order to address LAFCO requirements and to correspond with updated planning priorities of the City of Suisun City.

## **Travis Air Force Base Land Use Compatibility Plan**

The Travis Air Force Base (AFB) Land Use Compatibility Plan (LUCP) was adopted by the Solano County Airport Land Use Commission in 2002. The Travis AFB LUCP establishes planning boundaries for the airport and defines compatible types and patterns of future land use. The purpose of the LUCP is to provide the Travis AFB land area with compatibility guidelines for height, noise, and safety. The 2035 General Plan includes policies and programs that directly require communication with the AFB and review and conditioning of projects, as necessary, to ensure consistency with the Travis AFB LUCP.

As of the writing of this document, the Travis AFB LUCP is being updated and the City has structured the 2035 General Plan to be consistent with, and supportive of the updated LUCP.

## **Transportation Plans**

The Regional Transportation Plan and the Solano Comprehensive Transportation Plan are long-range planning documents prepared by the Metropolitan Transportation Commission (MTC) and the Solano Transportation Authority (STA), respectively. The Regional Transportation Plan identifies goals and objectives aimed at decreasing the transportation costs for low-income families; maintaining and improving bicycle and pedestrian facilities, public transit systems, local streets and roads, and highways; reducing vehicle miles traveled; taking effective action to protect the climate by reducing GHG and particulate matter emissions; and encouraging a growth pattern that creates complete communities with ready, safe and close access to jobs, shopping and services that are connected by reliable and cost-effective transit services; and providing a network of accessible pedestrian and bicycle paths that connect to nearby bus, rail, and ferry services.

The Solano Comprehensive Transportation Plan identifies, plans, and prioritizes the transportation needs of Solano County through 2030. The general goals and objectives of the Solano Comprehensive Transportation Plan include developing a balanced transportation system that reduces congestion and improves access and travel choices through the enhancement of roads; developing a comprehensive transit system for buses, rail, and ferries

to meet future demand; and implementing and maintaining a transportation system that provides for transit integration and makes the use of alternative modes convenient, safe, efficient, and cost effective

The 2035 General Plan includes policies and programs to ensure consistency with the Regional Transportation Plan and Solano Comprehensive Transportation Plan. The 2035 General Plan would provide a well-connected transportation system; manage travel demand to reduce up-front and ongoing cost of transportation infrastructure, enhance local mobility, improve air quality, and improve the local quality of life; and maintain a multi-modal transportation system for the safe and efficient movement of automobiles and trucks, pedestrians, bicyclists, and public transit users. The City also expresses the intent to collaborate with other agencies, such as the STA, Solano County, Caltrans, and the Metropolitan Transportation Commission on travel demand impacts and improvements to regional transportation facilities.

## **Plan Bay Area**

Plan Bay Area is a long-range integrated transportation and land-use/housing strategy through 2040 for the San Francisco Bay Area. On July 18, 2013, the Plan was jointly approved by the ABAG Executive Board and by the MTC. The Plan includes the region's Sustainable Communities Strategy and the 2040 Regional Transportation Plan. Plan Bay Area marks the nine-county region's first long-range plan to meet the requirements of California's 2008 Senate Bill 375, which requires development of a Sustainable Communities Strategy to accommodate future population growth and reduce GHG emissions. Although it is only advisory and therefore does not establish land-use restrictions, the Plan Bay Area provides policy guidance for long-term regional land use and transportation planning.

As part of this effort, ABAG and MTC have identified regionally important Priority Development Area (PDA). In Suisun City, the PDA includes all areas within the City's Downtown Waterfront Specific Plan (DWSP) area, as well as areas north of the DWSP near the train station. ABAG and MTC use "place types" to communicate the general characteristics of these growth areas. Suisun City's station area is identified as a "Transit Town Center," which would function as a local-serving center of economic and community activity, with a mix of origin and destination trips. The Transit Town Center place type is consistent with the City's vision for the area around the train station, as expressed in the 2035 General Plan and the DWSP.

## **Downtown Waterfront Specific Plan**

The City has developed the DWSP to guide development and conservation in the historic downtown area. The DWSP provides zoning and development standards, with customized and specific guidance for land use change, site planning, and building designed for the City's historic core. The DWSP is subservient to, and must be consistent with, the 2035 General Plan. The 2035 General Plan includes a program to review and amend the DWSP to ensure consistency with the 2035 General Plan and account for current environmental, economic, and social conditions.

## **Suisun City Zoning Ordinance**

The City's Zoning Ordinance describes the permitted land uses and development standards for each of the designated zoning districts in the City on a parcel-by-parcel basis. The Zoning Ordinance is subordinate to the General Plan and will be updated to reflect the changes made to the 2035 General Plan land use designations. The 2035 General Plan indicates that the City will revise the Zoning Ordinance, as necessary, to implement the 2035

General Plan. The 2035 General Plan also requires that the City establish pre-zoning for land within the Sphere of Influence consistent with the 2035 General Plan prior to annexation.

### **Suisun Marsh and Other Delta Plans and Programs**

The Suisun Marsh is located south of the Planning Area and is a critical part of the San Francisco Bay/Sacramento–San Joaquin Delta (Delta) estuary ecosystem. The Suisun Marsh is protected under the adopted Suisun Marsh Protection Plan which was prepared by the San Francisco Bay Conservation and Development Commission and California Department of Fish and Game and is administered by Solano County. Land use findings and policies identify objectives for managing existing land uses and land and water areas, including preserving and enhancing marsh habitat; providing habitat attractive to waterfowl; improving water distribution and levee systems; encouraging agricultural and grazing practices consistent with wildlife use, waterfowl hunting, and elimination of mosquito breeding; and restoring historic wetlands.

Further protection of the Delta would be provided plans and programs under development, including the Bay Delta Conservation Plan and Delta Plan. The Delta Plan, which was approved in May 2013, and Bay Delta Conservation Plan, currently under preparation, will meet the co-equal goals set forth in the Sacramento-San Joaquin Delta Reform Act of 2009 of providing a more reliable water supply for California and protecting, restoring, and enhancing the Delta ecosystem. While the Delta Stewardship Council does not have land use authority, but it does require state and local agencies proposing projects within or partially within the boundaries of the Delta or Suisun Marsh and that are covered by one or more provisions of the Delta Plan to demonstrate to the council that the covered action is consistent with the Delta Plan.

Although the Planning Area is not within the Suisun Marsh Protection Plan management area or the Bay Delta Conservation Plan and Delta Plan planning areas, implementation of the 2035 General Plan could indirectly relate to the goals identified within these plans. The 2035 General Plan policies and programs are intended to ensure future land uses are consistent with the Suisun Marsh Protection Plan Bay Delta Conservation Plan, Delta Plan, and other applicable Delta plans and programs. In the 2035 General Plan, the City has indicated its intent to communicate with the Department of Water Resources, Delta Stewardship Council, and San Francisco Bay Conservation and Development Commission to ensure consistency with planning efforts of those agencies, including, but not limited to, the Bay Delta Conservation Plan, Delta Plan, and Suisun Marsh Protection Plan. The 2035 General Plan indicates that the City will implement relevant policies of the Suisun Marsh Protection Plan to aid in protecting and restoring tidal marsh lands and require that access into the Suisun Marsh is in conformance with relevant Marsh Protection Plan policies related for utilities, public facilities, and transportation.

### **Conclusion**

As illustrated above, the 2035 General Plan was drafted to ensure consistency with other relevant plans, programs, and regulations that were developed to reduce or avoid environmental impacts. There is no aspect where inconsistencies between the 2035 General Plan and other plans would result in a significant environmental impact not already addressed comprehensively in this EIR. The impact is considered **less than significant**.

### **Mitigation Measure**

No mitigation is required.

## 3.11 NOISE AND VIBRATION

### 3.11.1 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

#### METHODOLOGY

Noise impacts were identified for new noise-sensitive developments located within areas affected by substantial existing or future noise sources (e.g., aircraft, automobile or truck traffic, railroad lines). Noise impacts were also identified for noise-producing projects proposed near existing or proposed noise-sensitive areas.

Noise impacts were also evaluated by comparing traffic noise generation associated with implementation of the 2035 General Plan relative to existing conditions. The Federal Highway Administration Highway Traffic Noise Prediction Model (FHWA-RD-77-108) was used to predict traffic noise levels under existing conditions and the 2035 General Plan. Table 3.11-1 lists the predicted distances to the 60 dBA, 65 dBA and 70 dBA  $L_{dn}$  traffic noise contours with buildout of the 2035 General Plan. These contour distances are used to identify portions of the Planning Area that could be subject to noise impacts. Table 3.11-2 compares projected future traffic noise levels under the 2035 General Plan to those under existing conditions (2010). This table provides an evaluation of the changes in traffic noise levels that would result from development under the 2035 General Plan. Exhibit 3.11-1 illustrates the predicted 60 dBA, 65 dBA, and 70 dBA  $L_{dn}$  noise contours for 2035 traffic volumes. Noise estimates took into account different vehicle speeds, but not the effects of existing walls, berms, or other existing intervening structures that may exist along certain street segments.

#### THRESHOLDS OF SIGNIFICANCE

Based on Appendix G of the State CEQA Guidelines, a noise impact is considered significant if implementation of the proposed project under consideration would do any of the following:

- ▶ Expose persons to or generate noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
- ▶ Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project;
- ▶ Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project;
- ▶ Expose people residing or working in the project area to excessive aircraft source noise levels; or
- ▶ Expose persons to or generation of excessive groundborne vibration or groundborne noise levels;
- ▶ For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public-use airport, expose people residing or working in the project area to excessive noise levels; or
- ▶ For a project within the vicinity of a private airstrip, expose people residing or working in the project area to excessive noise levels

**Table 3.11-1  
2035 General Plan 60 dBA, 65 dBA and 70 dBA L<sub>dn</sub> Traffic Noise Contours**

| Roadway                   | Roadway Segment                      | ADT    | Speed (MPH) | dBA, L <sub>dn</sub> at 50 feet | Distance to Contours   |                        |                        |
|---------------------------|--------------------------------------|--------|-------------|---------------------------------|------------------------|------------------------|------------------------|
|                           |                                      |        |             |                                 | 70 dBA L <sub>dn</sub> | 65 dBA L <sub>dn</sub> | 60 dBA L <sub>dn</sub> |
| SR 12                     | Civic Center Blvd. to Marina Blvd.   | 63,700 | 50          | 74.2                            | 96                     | 206                    | 445                    |
| SR 12                     | Marina Blvd. to Sunset Ave.          | 52,100 | 50          | 73.4                            | 84                     | 181                    | 389                    |
| SR 12                     | Sunset Avenue to Lawler Center Drive | 54,600 | 50          | 73.6                            | 86                     | 186                    | 401                    |
| SR 12                     | Woodlark Drive to Walters Road       | 51,100 | 50          | 73.3                            | 83                     | 178                    | 384                    |
| SR 12                     | Walters Road to Scally Road          | 31,800 | 50          | 71.2                            | 60                     | 130                    | 280                    |
| SR 12 EB Ramps            | SR 12 to Lotz Way                    | 6,100  | 50          | 64.0                            | 20                     | 43                     | 93                     |
| Main Street               | SR 12 WB Ramp to SR 12               | 6,500  | 30          | 59.5                            | 10                     | 21                     | 46                     |
| Main Street               | Driftwood Drive to Common Street     | 16,400 | 30          | 63.5                            | 18                     | 40                     | 86                     |
| N. Texas Street           | Wyoming Street to E. Bell Avenue     | 20,000 | 30          | 64.4                            | 21                     | 45                     | 98                     |
| Pennsylvania Avenue       | Illinois to SR 12                    | 26,200 | 30          | 65.5                            | 25                     | 54                     | 117                    |
| Sunset Avenue             | Merganser Drive to SR 12             | 32,700 | 40          | 68.9                            | 42                     | 92                     | 197                    |
| Sunset Avenue             | Railroad Avenue to Railroad Avenue   | 38,200 | 40          | 69.6                            | 47                     | 102                    | 219                    |
| Sunset Avenue             | E. Tabor Avenue to Sunset Court      | 17,000 | 40          | 66.1                            | 27                     | 59                     | 127                    |
| Walters Road              | Petersen Road to SR 12               | 32,800 | 40          | 69.0                            | 43                     | 92                     | 198                    |
| Walters Road              | McLellan Drive to Prosperity Lane    | 27,200 | 40          | 68.1                            | 38                     | 81                     | 174                    |
| Walters Rd.               | Air Base Pkwy to Walters Court       | 35,700 | 40          | 69.3                            | 45                     | 97                     | 209                    |
| Cordelia Street           | Pennsylvania Avenue to West Street   | 17,000 | 40          | 66.1                            | 27                     | 59                     | 127                    |
| E. Tabor Avenue           | Clay Bank Road to Railroad Avenue    | 14,900 | 40          | 65.5                            | 25                     | 54                     | 117                    |
| E. Tabor Avenue           | Olive Avenue to Davis Drive          | 17,900 | 40          | 66.3                            | 28                     | 61                     | 132                    |
| E. Travis Blvd.           | N Texas Street to Chamberlain Drive  | 30,500 | 40          | 68.6                            | 41                     | 87                     | 188                    |
| Petersen Road             | Walters Road to Perimeter Road       | 18,800 | 45          | 67.8                            | 36                     | 77                     | 165                    |
| Railroad Avenue           | Blossom Avenue to Worley Road        | 27,800 | 40          | 68.2                            | 38                     | 82                     | 177                    |
| Railroad Avenue           | Birchwood Court to Village Drive     | 35,900 | 45          | 70.6                            | 55                     | 118                    | 254                    |
| Railroad Avenue Extension | Main Street to Marina Blvd.          | 19,800 | 45          | 68.0                            | 37                     | 79                     | 171                    |
| Marina Blvd.              | SR 12 to Lotz Way                    | 9,000  | 35          | 62.0                            | 15                     | 31                     | 68                     |
| Emperor Drive             | Harlequin Way to SR 12               | 7,100  | 35          | 60.9                            | 12                     | 27                     | 58                     |
| Lawler Ranch Pkwy         | SR 12 to Mayfield Way                | 5,800  | 40          | 61.4                            | 13                     | 29                     | 62                     |
| Bella Vista Drive         | Walters Road to Charleston Street    | 3,800  | 35          | 58.2                            | 8                      | 18                     | 38                     |
| Pintail Drive             | E. Wigeon Way to Emperor Drive       | 7,800  | 35          | 61.3                            | 13                     | 29                     | 61                     |
| Prosperity Lane           | Langley Way to Walters Road          | 3,700  | 35          | 58.1                            | 8                      | 17                     | 37                     |
| West Street               | Main Street to Cordelia Street       | 8,900  | 35          | 61.9                            | 14                     | 31                     | 67                     |
| East Loop Road            | Petersen Road to Walters Road        | 7,100  | 35          | 60.9                            | 12                     | 27                     | 58                     |
| Branscombe Road           | Creed Road to SR 12                  | 200    | 35          | 45.4                            | 1                      | 2                      | 5                      |

Notes: ADT = average daily trips; CNEL = community noise equivalent level; dBA = A-weighted decibel; FHWA-RD-77-108 = Federal Highway Administration Highway Traffic Noise Prediction Model; L<sub>dn</sub> = day-night average noise level; MPH = miles per hour; SR = state route

Medium (2 axles) and heavy trucks (3+ axles) produce significantly more noise than passenger vehicles so their percentages are taken into account with heavier weighting when computing traffic noise levels

Source: Modeling conducted by AECOM 2014

| <b>Table 3.11-2</b><br><b>Increases in Traffic Noise under the 2035 General Plan Relative to Existing and No Project Conditions at 50 feet from the Centerline<sup>1</sup></b>   |                                      |   |   |   |             |            |
|--|--------------------------------------|---|---|---|-------------|------------|
| Roadway  | Roadway Segment                      | Existing Conditions<br>(dBA L <sub>dn</sub> ) | 2035 No Project<br>(dBA L <sub>dn</sub> ) | 2035 General Plan<br>(dBA L <sub>dn</sub> ) | Change vs.  |            |
|  |                                      |   |   |   | Existing    | No Project |
| SR 12  | Civic Center Blvd. to Marina Blvd.   | 72.6  | 73.8                                      | 74.2  | 1.6         | 0.4        |
| SR 12  | Marina Blvd. to Sunset Ave.          | 71.8  | 73.3                                      | 73.4  | 1.6         | 0.0        |
| SR 12  | Sunset Avenue to Lawler Center Drive | 71.0  | 73.5                                      | 73.6  | 2.5         | 0.1        |
| SR 12  | Woodlark Drive to Walters Road       | 69.8  | 73.1                                      | 73.3  | <b>3.4</b>  | 0.2        |
| SR 12  | Walters Road to Scally Lane          | 68.1  | 71.2                                      | 71.2  | <b>3.1</b>  | 0.0        |
| SR 12 EB Ramps   | SR 12 to Lotz Way                    | 63.4  | 63.9                                      | 64.0  | 0.7         | 0.1        |
| Main Street  | SR 12 WB Ramp to SR 12               | 58.3  | 59.4                                      | 59.5  | 1.2         | 0.1        |
| Main Street  | Driftwood Drive to Common Street     | 58.4  | 63.5                                      | 63.5  | <b>5.1</b>  | 0.0        |
| N. Texas Street  | Wyoming Street to E. Bell Avenue     | 63.1  | 63.9                                      | 64.4  | 1.3         | 0.4        |
| Pennsylvania Avenue  | Illinois to SR 12                    | 61.8  | 65.1                                      | 65.5  | <b>3.8</b>  | 0.4        |
| Sunset Avenue  | Merganser Drive to SR 12             | 65.0  | 68.9                                      | 68.9  | <b>4.0</b>  | 0.1        |
| Sunset Avenue  | Railroad Avenue to Railroad Avenue   | 68.7  | 69.5                                      | 69.6  | 0.9         | 0.1        |
| Sunset Avenue  | E. Tabor Avenue to Sunset Court      | 64.8  | 66.0                                      | 66.1  | 1.3         | 0.1        |
| Walters Road   | Petersen Road to SR 12               | 65.3  | 68.7                                      | 69.0  | <b>3.7</b>  | 0.3        |
| Walters Road   | McLellan Drive to Prosperity Lane    | 65.4  | 67.5                                      | 68.1  | 2.7         | 0.7        |
| Walters Rd.  | Air Base Pkwy to Walters Court       | 67.0  | 69.0                                      | 69.3  | 2.3         | 0.3        |
| Cordelia Street  | Pennsylvania Avenue to West Street   | 57.1  | 65.5                                      | 66.1  | <b>9.0</b>  | 0.6        |
| E. Tabor Avenue  | Clay Bank Road to Railroad Avenue    | 63.7  | 65.3                                      | 65.5  | 1.9         | 0.2        |
| E. Tabor Avenue  | Olive Avenue to Davis Drive          | 63.3  | 65.9                                      | 66.3  | <b>3.0</b>  | 0.4        |
| E. Travis Blvd.  | N Texas Street to Chamberlain Drive  | 66.9  | 68.2                                      | 68.6  | 1.8         | 0.4        |
| Petersen Road  | Walters Road to Perimeter Road       | 54.9  | 66.9                                      | 67.8  | <b>12.9</b> | 0.9        |
| Railroad Avenue  | Blossom Avenue to Worley Road        | 61.6  | 67.8                                      | 68.2  | <b>6.6</b>  | 0.4        |
| Railroad Avenue  | Birchwood Court to Village Drive     | 64.0  | 70.5                                      | 70.6  | <b>6.6</b>  | 0.1        |
| Railroad Avenue Extension  | Main Street to Marina Blvd.          |   | 67.8                                      | 68.0  | NA          | 0.2        |
| Marina Blvd.   | SR 12 to Lotz Way                    | 59.4  | 61.7                                      | 62.0  | 2.5         | 0.3        |
| Emperor Drive  | Harlequin Way to SR 12               | 59.8  | 60.8                                      | 60.9  | 1.1         | 0.1        |
| Lawler Ranch Pkwy  | SR 12 to Mayfield Way                | 60.5  | 61.0                                      | 61.4  | 0.9         | 0.5        |
| Bella Vista Drive  | Walters Road to Charleston Street    | 57.7  | 57.7                                      | 58.2  | 0.5         | 0.5        |
| Pintail Drive  | E. Wigeon Way to Emperor Drive       | 60.3  | 61.2                                      | 61.3  | 1.1         | 0.1        |
| Prosperity Lane  | Langley Way to Walters Road          | 57.3  | 57.7                                      | 58.1  | 0.8         | 0.4        |
| West Street  | Main Street to Cordelia Street       |   | 61.9                                      | 61.9  | NA          | 0.0        |
| East Loop Road   | Petersen Road to Walters Road        |   | 58.0                                      | 60.9  | NA          | 2.9        |
| Branscombe Road  | Creed Road to SR 12                  | 43.2  | 45.4                                      | 45.4  | 2.2         | 0.0        |
| Notes: dBA = A-weighted decibels; L <sub>dn</sub> = day-night average noise level; SR = State Route<br><sup>1</sup> Traffic noise level at 50 feet from roadway centerline in terms of day/night average levels<br>Sources: Federal Highway Administration Highway Traffic Noise Prediction Model (FHWA RD-77-108) |                                      |   |   |   |             |            |

## Impact Analysis

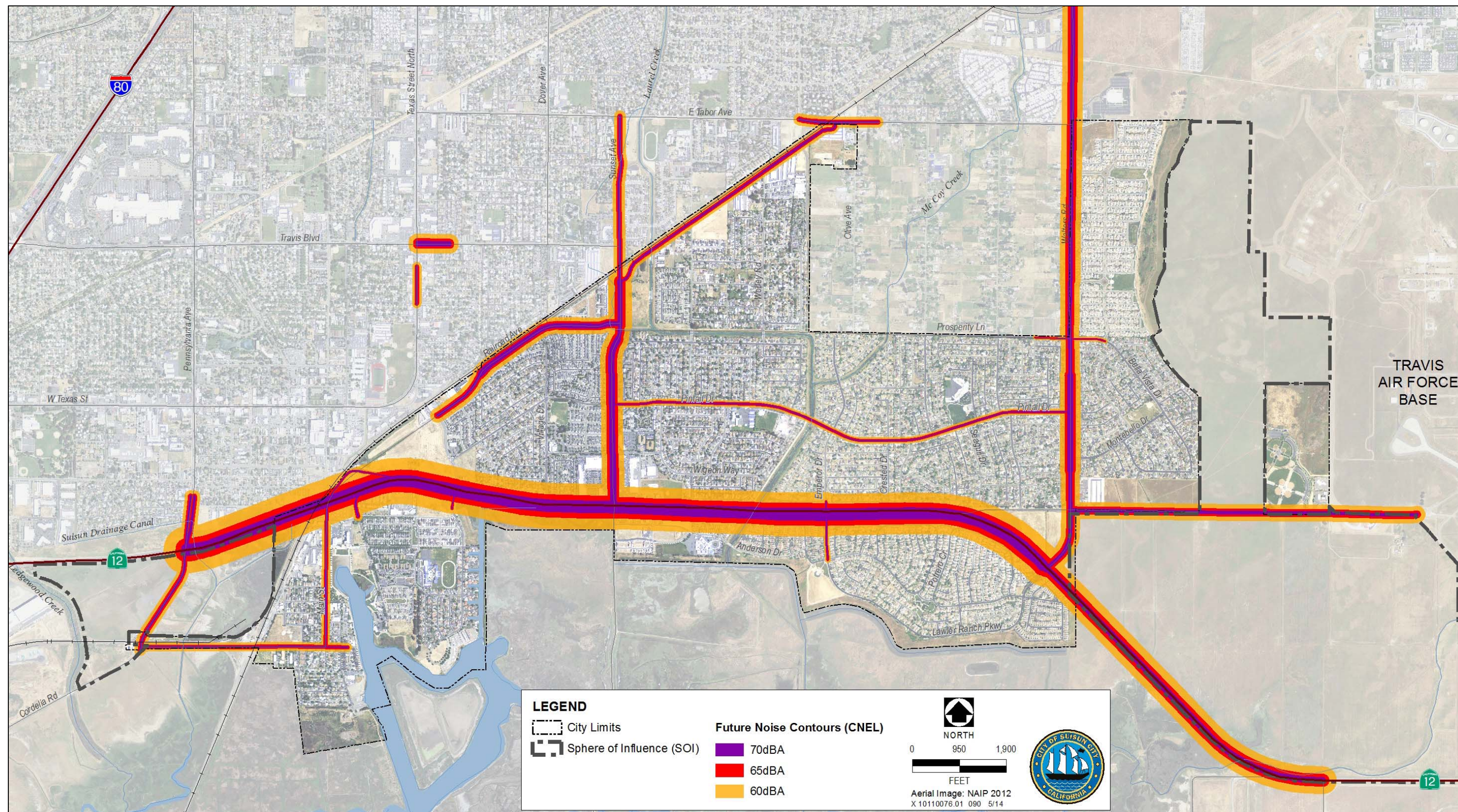
**IMPACT 3.11-1** *Potential for Temporary, Short-Term Exposure of Sensitive Receptors to Construction Noise. Short-term construction source noise levels could exceed the applicable City standards at nearby noise-sensitive receptors. In addition, if construction activities were to occur during more noise-sensitive hours, construction source noise levels could also result in annoyance and/or sleep disruption to occupants of existing and proposed noise-sensitive land uses and create a substantial temporary increase in ambient noise levels. The 2035 General Plan includes policies and programs to reduce construction noise levels. The City cannot demonstrate at this time that the implementation of these policies and programs would avoid temporary construction noise impacts in all instances. The impact is considered **potentially significant**.*

Residences and businesses located adjacent to areas of construction activity would be affected by construction noise during buildout of the 2035 General Plan and construction of green infrastructure and bicycle infrastructure identified in the Draft Climate Action Plan. Construction noise impacts result when construction activities occur during noise-sensitive times of the day (early morning, evening, or nighttime hours), the construction occurs in areas immediately adjoining noise sensitive land uses, and when construction durations last over extended periods of time.

Noise generating construction activities related to General Plan implementation would include demolition activities, site grading and excavation, building erection, paving, and landscaping. The highest construction noise levels are typically generated during grading and excavation. Relatively lower noise levels typically occur during building construction.

Large pieces of earth-moving equipment, such as graders, excavators, and dozers, generate maximum noise levels of 85 dBA to 90 dBA at a distance of 50 feet (refer to Table 3.11-3 below) (EPA 1971:11). Typical hourly average construction-generated noise levels are approximately 80 dBA to 85 dBA measured at a distance of 50 feet from the site during busy construction periods.

| <b>Table 3.11-3<br/>Typical Construction Equipment Noise Levels</b>   |                                |  |
|---|--------------------------------|--|
| Type of Equipment   | Noise Level in dB at 50 feet   |  |
|   | Without Feasible Noise Control | With Feasible Noise Control <sup>1</sup> |
| Dozer or Tractor  | 80                             | 75                                       |
| Excavator   | 88                             | 80                                       |
| Compactor   | 82                             | 75                                       |
| Front-end Loader  | 79                             | 75                                       |
| Backhoe   | 85                             | 75                                       |
| Grader  | 85                             | 75                                       |
| Crane   | 83                             | 75                                       |
| Generator   | 78                             | 75                                       |
| Truck   | 91                             | 75                                       |
| Pile Driver   | 101                            | -  |
| Note: dB = decibel<br><sup>1</sup> Feasible noise control includes the use of intake mufflers, exhaust mufflers, and engine shrouds in accordance with manufacturer's specifications.<br>Sources: EPA 1971: 11; FTA 2006: 12-6 – 12-7 |                                |  |



Source: Suisun City 2012, Fehr & Peers adapted by AECOM 2014

Exhibit 3.11-1

Future Traffic Noise Contours



Pile-driving could occur at some development sites, particularly within the Downtown Waterfront Area, where multi-story construction is anticipated to occur. This type of construction activity could produce very high noise levels of approximately 105 decibels (dB) at 50 feet. Noise levels would attenuate at a rate of approximately 6 dBA per doubling of distance between the noise source and receptor. Intervening structures would provide additional shielding from the noise source.

The 2035 General Plan would accommodate development of existing developed properties, as well as development on vacant or mostly vacant parcels throughout the Planning Area. The City anticipates development at the fringes of the City limits and Planning Area, in addition to focused infill development within the Downtown Waterfront Area. The City has identified parcels throughout the Downtown Waterfront Area, including sites north and south of SR 12 where infill development is anticipated under the 2035 General Plan. This includes properties that are near existing noise-sensitive uses, such as residences and schools, as well as properties that may be developed in phases, with noise-sensitive residential uses included in earlier phases. In these cases, there could be temporary construction activity in areas directly adjacent to existing or planned noise-sensitive uses and the worst-case noise exposure estimates provided above may occur.

**Relevant Policies and Programs of the 2035 General Plan**

- **Policy PHS-1.9:** The City shall require all feasible noise mitigation to reduce construction and other short-term noise impacts as a condition of approval.
- **Program PHS-1.1. Reduce Noise Exposure for Noise-Sensitive Land Uses.** Development of noise-sensitive land uses in areas with existing noise from mobile, stationary, or agricultural sources will be reviewed and conditioned according to the City’s noise policies. Projects that could expose noise-sensitive uses will be required to incorporate feasible mitigation to address potentially significant noise effects. Methods may include, but are not limited to: traffic calming, site planning that orients noise-sensitive outdoor gathering areas away from sources, buffering, sound insulation, and other methods deemed effective by the City. Development projects that are affected by non-transportation related noise shall be mitigated to achieve acceptable levels specified in Table 9-2 [as labeled in the General Plan and Table 3.11-4, as labeled in this section], as measured at outdoor activity areas of existing and planned noise-sensitive land uses. If existing noise levels exceed acceptable levels in Table 9-2 [Table 3.11-4 in this section] as measured at outdoor activity areas of noise sensitive land uses, then:

| <b>Table 3.11-4</b><br><b>Noise Level Performance Standards for New Projects Affected By, or Including, Non-Transportation Noise Sources</b>  |                        |                          |
|---|------------------------|--------------------------|
| Noise Level Descriptor  | Daytime (7 am – 10 pm) | Nighttime (10 pm – 7 am) |
| Hourly $L_{eq}$   | 60 dBA                 | 45 dBA                   |
| $L_{max}$   | 75 dBA                 | 65 dBA                   |
| Notes: Each of the noise levels specified shall be lowered by five dBA for simple tone noises, noises consisting primarily of speech, or music, or for recurring impulsive noises. These noise level standards do not apply to residential units established in conjunction with industrial or commercial uses (e.g., caretaker dwellings). |                        |                          |

- Where existing exterior noise levels are between 60 and 65 dBA at outdoor activity areas of noise-sensitive uses, an increase of 3 dBA or greater is considered significant and requires mitigation to achieve acceptable levels.

- Where existing exterior noise levels are greater than 65 dBA at outdoor activity areas of noise-sensitive uses, an increase of 1.5 dBA or greater is considered significant and requires mitigation to achieve acceptable levels.
  - Where it is not possible to reduce noise in outdoor activity areas to 60 dBA or less using practical application of the best-available noise reduction measures, an exterior noise level of up to 65 dBA may be allowed, provided that available exterior noise level reduction measures have been implemented.
- The City will identify regional, state, and federal sources of funding to make improvements that would attenuate noise as experienced by existing noise-sensitive land uses, where feasible.
- **Program PHS-1.2: Review and Conditioning of Noise-Generating New Uses.** New developments that generate noise will be reviewed and feasible mitigation will be required to reduce effects on existing noise-sensitive land uses. Methods may include, but are not limited to: operating at less noise-sensitive parts of the day, better distribution of vehicle traffic to avoid large volumes on any one street, traffic calming, buffering, sound insulation, and other methods deemed effective by the City. The maximum noise level resulting from new sources and ambient noise shall not exceed the standards in Table 9-3 [as labeled in the General Plan and 3.11-5 as labeled in this section], as measured at outdoor activity areas of any affected noise sensitive land use except:

| <b>Table 3.11-5<br/>Noise Level Performance Standards for Non-Transportation Noise Sources</b> |   |                                |
|--|---|--------------------------------|
| <b>Cumulative Duration of a Noise Event<sup>1</sup><br/>(Minutes)</b>                          | <b>Maximum Exterior Noise Level Standards<sup>2</sup></b> |                                |
|  | <b>Daytime<sup>3,5</sup></b>                              | <b>Nighttime<sup>4,5</sup></b> |
| 30-60  | 50  | 45                             |
| 15-30  | 55  | 50                             |
| 5-15   | 60  | 55                             |
| 1-5  | 65  | 60                             |
| 0-1  | 65  | 60                             |

Notes:

<sup>1</sup> Cumulative duration refers to time within any one-hour period.

<sup>2</sup> Noise level standards measured in dBA.

<sup>3</sup> Daytime = Hours between 7:00 a.m. and 10:00 p.m.

<sup>4</sup> Nighttime = Hours between 10:00 p.m. and 7:00 a.m.

<sup>5</sup> Each of the noise level standards specified may be reduced by 5 dBA for tonal noise (i.e., a signal which has a particular and unusual pitch) or for noises consisting primarily of speech or for recurring impulsive noises (i.e., sounds of short duration, usually less than one second, with an abrupt onset and rapid decay such as the discharge of firearms).

- If the ambient noise level exceeds the standard in Table 9-3 [as labeled in the General Plan and 3.11-5 as labeled in this section], the standard becomes the ambient level plus 5 dBA.
  - Reduce the applicable standards in Table 9-3 [as labeled in the General Plan and 3.11-5 as labeled in this section] by 5 decibels if they exceed the ambient level by 10 or more decibels.
- **Program PHS-1.5. Construction Noise and Vibration Reduction Measures.** The City will require new developments proposing construction adjacent to existing noise-sensitive uses or close enough to noise-sensitive uses that relevant performance standards could be exceeded to incorporate feasible mitigation to

reduce construction noise exposure. This may include additional limits on the days and times of day when construction can occur, re-routing construction equipment away from adjacent noise-sensitive uses, locating noisy construction equipment away from noise-sensitive uses, shrouding or shielding impact tools, use of intake and exhaust mufflers and engine shrouds, construction of acoustic barriers (e.g., plywood, sound attenuation blankets), pre-drilling holes for placement of piles or non-impact pile driving where piles would be needed, and other feasible technologies or reduction measures necessary to achieve the City's relevant performance standards.

## Conclusion

The General Plan anticipates development and, as a necessary outcome of this development, both temporary and long-term sources of noise. The General Plan also anticipates the potential for noise-sensitive land uses to be developed in areas with some amount of existing noise exposure today. With implementation of the 2035 General Plan existing and planned noise-sensitive uses could be exposed to substantial temporary construction noise. Implementation of the 2035 General Plan would also involve generation of construction noise, which could expose existing and planned noise-sensitive uses to adverse, temporary construction-related noise.

For both transportation and non-transportation noise sources, the General Plan establishes allowable noise levels for different land uses and various strategies to reduce noise exposure. Acknowledging the importance of encouraging development in the Downtown Waterfront Area, the City's noise standards are relaxed compared to other portions of the Planning Area, to promote the overall objective of higher-density, compact, transit-supportive, mixed-use development in this portion of the Planning Area.

Policy PHS-1.9 of the 2035 General Plan requires new developments to provide all feasible noise mitigation to reduce construction noise impacts as a condition of approval. Program PHS-1.5 provides more detail on this requirement, which could include non-impact pile driving techniques, if necessary and feasible, temporary noise barriers, and other techniques that have been shown to be effective in substantially mitigating potential temporary noise impacts.

Program PHS1.1 requires projects that are affected by non-transportation related noise to incorporate mitigation to achieve acceptable levels specified in Table 3.11-5, as measured at outdoor activity areas of existing and planned noise-sensitive land uses. Program PHS-1.2 requires new developments that generate noise to incorporate feasible mitigation to reduce effects on existing noise-sensitive land uses. The program also includes performance standards of the maximum acceptable noise level resulting from new sources and ambient noise, as measured at outdoor activity areas of any affected noise sensitive land use. These policies and programs are designed to provide guidance for both short-term, construction-related noise and long-term noise exposure. Proposed policies and programs of the 2035 General Plan would substantially reduce construction noise impacts and provide guidance for acceptable construction noise levels. Although the policies and programs are designed to avoid substantial disturbances to noise-sensitive receptors, the City anticipates that, despite implementation of feasible noise reduction strategies, noise-sensitive uses could be exposed to temporary noise in exceedance of the City's standards. The impact is considered **significant**.

## Mitigation Measure

The policies and programs of the 2035 General Plan represent all feasible mitigation. The impact is considered **significant and unavoidable**.

**IMPACT 3.11-2**    **Long-Term Noise Exposure for Noise-Sensitive Land Uses.** *Existing and planned noise-sensitive land uses under the 2035 General Plan could occur in areas that either are currently adversely affected by transportation and non-transportation noise sources, or will be in the future. This could expose noise-sensitive uses to noise levels in excess of the 1992 General Plan noise policies and the 2035 General Plan noise policies. Implementation of the 2035 General Plan would also permanently and substantially increase existing ambient noise levels in certain locations. The 2035 General Plan establishes the City's standards for land use and noise compatibility and strategies for addressing conflicts. While the policy approach would reduce adverse noise exposure impacts, the City cannot demonstrate that potentially significant impacts would be avoided in every case. The impact is considered **potentially significant**.*

With implementation of the 2035 General Plan, future development of noise-sensitive uses (e.g., residences, schools, hospitals, parks, hotels, places of worship, libraries) would occur in areas that either are currently exposed to or would be exposed to future traffic or railroad noise levels that exceed the 1992 General Plan's exterior noise standard for noise-sensitive uses of 65 dBA CNEL. It is also possible that these and other noise-sensitive uses could be developed in areas where transportation-related noise could exceed 2035 General Plan exterior and interior noise standards, including the somewhat relaxed standard established for the Downtown Waterfront Areas and portions of the Planning Area designated for mixed-use development (70 dBA  $L_{dn}$  or CNEL for outdoor activity areas and 45 dBA  $L_{dn}$  for interior areas). It is also possible that noise-sensitive development could be exposed to non-transportation noise in excess of the City's 2035 General Plan non-transportation standards (45 dB  $L_{eq}$  nighttime, 60 dBA  $L_{eq}$  daytime, 65 dBA  $L_{max}$  nighttime, 75 dBA  $L_{max}$  daytime).

New sources of non-transportation noise subject to the City's discretionary review will be required to incorporate feasible mitigation to reduce effects on existing noise-sensitive land uses, such as operating at less noise-sensitive parts of the day, buffering, sound insulation, and other strategies. Specific areas in the city that could be exposed to future noise levels that exceed the 2035 General Plan noise standards include near commercial/employment uses along heavily traveled roadways (e.g., SR 12, Sunset Avenue, Walters Road, and Railroad Avenue) and near existing and future industrial operations with outdoor operations.

The 2035 General Plan would accommodate a variety of land uses, including residential; commercial, office, and industrial; open space and recreation; and institutional and public facilities (e.g., electrical substations, wastewater conveyance facilities, and schools). The long-term operation of these uses could result in stationary and area noise from, but not limited to, the following potential sources: landscape and building maintenance activities (e.g., hand tools, power tools, lawn and garden equipment); voices; amplified music; mechanical equipment (e.g., pumps, generators heating, ventilation, and cooling systems); loading dock activities; parking lots; garbage collection; and other noise sources.

Development anticipated under the 2035 General Plan would generate and attract vehicular traffic, which would increase traffic noise levels along existing and future roadways. As illustrated in Tables 3.11-1 and 3.11-2, traffic associated with buildout of the 2035 General Plan and regional growth is expected to increase noise levels along City streets and regional thoroughfares throughout the Planning Area. The traffic noise level increase is substantial in some areas relative to existing conditions. For noise level increases, a 1-dB increase is imperceptible; a 3-dB increase is just perceptible; a 6-dB increase is clearly noticeable; and a 10-dB increase is subjectively perceived as approximately twice as loud (Egan 1988: 21).

There are several roadways where the addition of vehicular trips would increase noise levels so that they would be perceptible (by at least 3 dB) and two roadways (Main Street, Cordelia Street, Peterson Road, and Railroad

Avenue) where the increase over existing conditions is anticipated to be clearly noticeable (by at least 5 dB). The predicted traffic noise levels shown represent conservative potential noise exposure. In reality, noise levels may vary from that represented, since the calculations do not assume natural or artificial shielding or reflection from existing or proposed structures. Actual noise levels would vary from day to day, depending on factors, such as local traffic volumes and speed, shielding from existing and proposed structures, variations in attenuation rates resulting from changes in surface parameters, and meteorological conditions.

### **Landscape and Building Maintenance Activities**

Development under the 2035 General Plan, including infill development in areas adjacent to existing or planned noise-sensitive uses could require the operation of landscape maintenance and other property maintenance equipment. Landscape maintenance activities include the use of leaf blowers, power tools, and gasoline-powered lawn mowers, could result in intermittent noise levels that range from approximately 88.3 dB at 6.5 feet, respectively. Based on an equipment noise level of 88.3 dB, the use of such equipment, assuming a noise attenuation rate of 6 dB per doubling of distance from the source, would result in exterior noise levels of approximately 70.1 dB at a reference distance of 50 feet. Although such activities would likely occur during the daytime hours, the exact hours and locations are unknown at this time. Such activities are anticipated to be intermittent and would occur during the daytime, which is a less noise-sensitive time of day. The use of such equipment is not so frequent that applicable daily noise standards or maximum single-event noise standards would be exceeded for noise-sensitive land uses.

### **Mechanical Equipment**

Development under the 2035 General Plan, including infill development in areas adjacent to existing or planned noise-sensitive uses, could require the operation of mechanical equipment. The operation of mechanical equipment at residential, commercial, office, and industrial; and institutional and public facilities (e.g., electrical substations, wastewater conveyance, and schools) is another stationary and area noise source. The operation of mechanical equipment (e.g., pumps, generators; heating, ventilation, and cooling systems) could result in intermittent noise levels of approximately 90 dB at 3 feet (EPA 1971). Based on this equipment noise level, the operation of such equipment, assuming a noise attenuation rate of 6 dB per doubling of distance from the source, may result in exterior noise levels of approximately 60 dB at 95 feet.

Although these types of equipment are typically shielded from direct exposure (e.g., housed on rooftops, in equipment rooms, or in exterior enclosures), the actual placement of such equipment on future land uses is not known at this time. It is possible that noise levels could exceed the applicable standards at existing and proposed noise-sensitive receptors and create a substantial permanent increase in ambient noise levels at existing noise-sensitive receptors if measures are not taken to reduce such noise exposure.

### **Solid Waste Collection**

Solid waste collection (e.g., emptying large refuse dumpsters, possible multiple times per week, and the shaking of containers with a hydraulic lift), could result in instantaneous maximum noise levels of approximately 89 dB  $L_{max}$  at 50 feet. Such activities are anticipated to be very brief, intermittent, and would occur during daytime hours, which are considered to be less noise-sensitive times of day. Solid waste collection activities are infrequent, and therefore would not be expected to exceed daily noise standards. Noises would typically emanate from public rights-of-way, which would normally be separated from outdoor gathering spaces associated with

residential uses. Noise associated with garbage collection would not be expected to create single-event noise that would be substantially disruptive to daily activities or cause sleep disturbance.

### **Parking Lots**

Parking lots and parking structures include noise sources such as vehicles entering/exiting the lot, alarms/radios, and doors slamming. Neither the size (i.e., capacity) or location of parking lots that could be constructed under the 2035 General Plan is known at this time. However, according to the FHWA, parking lots with a maximum hourly traffic volume of approximately 1,000 vehicles per hour either entering or exiting the lot could result in a peak hour and daily noise levels of approximately 56 dB  $L_{eq}$  and 63 dB  $L_{dn}$  at 50 feet.

### **Commercial, Office, and Industrial Activities**

Commercial, office, and industrial noise sources include loading dock activities, air circulation systems, delivery areas, and the operation of trash compactors and air compressors. Such activities could result in intermittent noise levels of approximately 91 dB  $L_{max}$  at 50 feet (EPA 1971) and high single-event noise levels from backup alarms from delivery trucks during the more noise-sensitive hours of the day. Neither the exact hours of operation nor the location of such potential noise sources are known at this time. Thus, land use related noise levels could exceed the applicable standards at existing and proposed noise-sensitive receptors, especially if such activities were to occur during the more noise-sensitive hours (e.g., evening, nighttime, and early morning) and create a substantial increase in ambient noise levels at existing noise-sensitive receptors. In addition, if such activities were to occur during these more noise-sensitive hours, project-generated noise levels may result in annoyance and/or sleep disruption to occupants of the on-site (e.g., existing and proposed) noise-sensitive land uses.

### **Residential, School, and Recreation Activities and Events**

Noise sources typical of residential, school, recreation, and event uses could include voices and amplified music/speaker systems. Such sources could result in noise levels of approximately 60–75 dB  $L_{eq}$  at 50 feet. Although such activities would likely occur primarily during the daytime hours, neither the hours of operation nor location of such sources are known at this time. It is possible that noise levels could exceed the applicable standards at existing and proposed noise-sensitive receptors, especially if such activities were to occur during the more noise-sensitive hours (e.g., evening, nighttime, and early morning) and create a substantial increase in ambient noise levels at existing noise-sensitive receptors. In addition, if such activities were to occur during these more noise-sensitive hours, project-generated noise levels may result in annoyance and/or sleep disruption to occupants of the existing and proposed noise-sensitive land uses.

### **Relevant Policies and Programs of the 2035 General Plan**

- ▶ **Policy PHS-1.1:** Large-scale commercial land uses that could require 50 or more large truck trips per day shall route truck traffic to SR 12 OR Arterials and avoid Collectors and Local Streets.
- ▶ **Policy PHS-1.2:** New development shall be designed to disperse vehicular traffic onto a network of fully connected smaller roadways.
- ▶ **Policy PHS-1.3:** Industrial and other noise-generating land uses should be located away from noise-sensitive land uses or should use noise attenuation methods, such as enclosing substantial noise sources completely

within buildings or structures, using muffling devices, or incorporating other technologies designed to reduce noise levels.

- **Policy PHS-1.4:** The City will use all feasible means to reduce the exposure of sensitive land uses to excessive noise levels and mitigate where noise levels exceed those specified in Table 9-1 [as labeled in the General Plan and Table 3.11-6 as labeled in this section].

| <b>Table 3.11-6<br/>Maximum Allowable Noise Exposure from Transportation Noise Sources at Noise-Sensitive Land Uses</b> |  |                     |                     |
|---|--|---------------------|---------------------|
| Land Use  | Outdoor Activity Area (dBA L <sub>dn</sub> ) | Interior Spaces     |                     |
|   |  | dBA L <sub>dn</sub> | dBA L <sub>eq</sub> |
| Residential   | 60   | 45                  | --                  |
| Residential (Downtown Waterfront and Mixed Use)   | 65   | 45                  | --                  |
| Transient Lodging   | 60   | 45                  | --                  |
| Hospitals, Nursing Homes  | 60   | 45                  | --                  |
| Theaters, Auditoriums, Music Halls  | --   | --                  | 35                  |
| Churches, Meeting Halls   | 60   | --                  | 40                  |
| Office Buildings  | --   | --                  | 45                  |
| School, Libraries, Museums  | 60   | --                  | 45                  |
| Playgrounds, Neighborhoods  | 70   | --                  | --                  |

- **Policy PHS-1.5:** It is the City's policy to allow outdoor transportation noise levels for residential uses in mixed-use land uses designations, including the Downtown Waterfront Specific Plan Area up to 70 dBA L<sub>dn</sub> and this level of noise exposure will not be considered a significant impact for the purposes of California Environmental Quality Act review.
- **Policy PHS-1.7:** The City should coordinate with Union Pacific and the Public Utilities Commission to replace at-grade railroad crossings with Federal Railroad Administration-approved quiet zone rated crossing systems designed to reduce or eliminate the use of rail horn blasts within the City, as funding is available.
- **Policy PHS-1.8:** Soundwalls are prohibited as a method for reducing noise exposure that could be addressed through other means, such as, site design, setbacks, earthen berms, or a combination of these techniques.
- **Policy PHS-1.10:** Public events, such as school sporting events, festivals, and other similar community and temporary events are exempt from the noise standards outlined in this Element.
- **Program PHS-1.1. Reduce Noise Exposure for Noise-Sensitive Land Uses.** Development of noise-sensitive land uses in areas with existing noise from mobile, stationary, or agricultural sources will be reviewed and conditioned according to the City's noise policies and ordinance. Projects that could expose noise-sensitive uses will be required to incorporate feasible mitigation to address potentially significant noise effects. Methods may include, but are not limited to: traffic calming, site planning that orients noise-sensitive outdoor gathering areas away from sources, buffering, sound insulation, and other methods deemed effective by the City. Development projects that are affected by non-transportation related noise shall be mitigated to achieve acceptable levels specified in Table 9-2 [as labeled in the General Plan and Table 3.11-4, as labeled in this section], as measured at outdoor activity areas of existing and planned noise-sensitive land uses. If

existing noise levels exceed acceptable levels in Table 9-2 [Table 3.11-4 in this section] as measured at outdoor activity areas of noise sensitive land uses, then:

- Where existing exterior noise levels are between 60 and 65 dBA at outdoor activity areas of noise-sensitive uses, an increase of 3 dBA or greater is considered significant and requires mitigation to achieve acceptable levels.
  - Where existing exterior noise levels are greater than 65 dBA at outdoor activity areas of noise-sensitive uses, an increase of 1.5 dBA or greater is considered significant and requires mitigation to achieve acceptable levels.
  - Where it is not possible to reduce noise in outdoor activity areas to 60 dBA or less using practical application of the best-available noise reduction measures, an exterior noise level of up to 65 dBA may be allowed, provided that feasible exterior noise level reduction measures have been implemented.
  - The City will identify regional, state, and federal sources of funding to make improvements that would attenuate noise as experienced by existing noise-sensitive land uses, where feasible.
- **Program PHS-1.2: Review and Conditioning of Noise-Generating New Uses.** New developments that generate noise will be reviewed and feasible mitigation will be required to reduce effects on existing noise-sensitive land uses. Methods may include, but are not limited to: operating at less noise-sensitive parts of the day, better distribution of vehicle traffic to avoid large volumes on any one street, traffic calming, buffering, sound insulation, and other methods deemed effective by the City. The maximum noise level resulting from new sources and ambient noise shall not exceed the standards in Table 9-3 [as labeled in the General Plan and 3.11-5 as labeled in this section], as measured at outdoor activity areas of any affected noise sensitive land use except:
- If the ambient noise level exceeds the standard in Table 9-3 [as labeled in the General Plan and 3.11-5 as labeled in this section], the standard becomes the ambient level plus 5 dBA.
  - Reduce the applicable standards in Table 9-3 [as labeled in the General Plan and 3.11-5 as labeled in this section] by 5 decibels if they exceed the ambient level by 10 or more decibels.
  - The City shall exempt all school related events and City sponsored events from noise standards outlined in this chapter.

## Conclusion

As described above, implementation of the 2035 General Plan would involve additional noise sources and development of new noise-sensitive land uses, both of which could create adverse noise exposure effects. The City anticipates a substantial increase in vehicular traffic along City streets and regional thoroughfares, which could expose existing or planned sensitive uses to unacceptable levels of transportation noise. Policies in the 2035 General Plan establish noise performance standards and require feasible mitigation. Implementation of policies and programs in the 2035 General Plan, as described above, would reduce the potential for noise exposure impacts. Although the policies and programs are designed to avoid substantial disturbances to noise-sensitive receptors, the City anticipates that, despite implementation of feasible noise reduction strategies, noise-sensitive

uses could be exposed to noise in exceedance of the City's standards, including noise generated by new development anticipated under the 2035 General Plan. Implementation of the 2035 General Plan would also increase noise levels in some locations substantially above existing ambient conditions. Special events could generate substantial noise that could affect certain noise-sensitive land uses, but such activities will be exempt from the General Plan noise standards. The City cannot demonstrate at this time that policies and programs in the 2035 General Plan would reduce impacts of each project and upon each project that could be developed under the General Plan to a less-than-significant level. The impact is considered **significant**.

#### Mitigation Measure

The policies and programs of the 2035 General Plan represent all feasible mitigation. The impact is considered **significant and unavoidable**.

**IMPACT 3.11-3** **Increases in Vibration Levels.** *Construction of projects under the 2035 General Plan could cause a temporary, short-term disruptive vibration if it were to occur near sensitive receptors. Under the 2035 General Plan, future development of new vibration-sensitive land uses could occur within vibration-generating areas (e.g., railroads). The impact is considered **potentially significant**.*

Construction and demolition activities associated with future projects implemented under the 2035 General Plan have the potential to result in varying degrees of temporary groundborne vibration, depending on the specific construction equipment used, the location of construction activities relative to sensitive receptors, and operations/activities involved. Vibration generated by construction equipment spreads through the ground and diminishes in magnitude with increases in distance. The type and density of soil can also affect the transmission of energy. Table 3.11-7 provides vibration levels for typical construction equipment.

| <b>Table 3.11-7</b><br><b>Typical Vibration Levels for Construction Equipment</b>   |             |                         |                                       |
|---|-------------|-------------------------|---------------------------------------|
| Equipment   |             | PPV at 25 Feet (in/sec) | Approximate L <sub>v</sub> at 25 Feet |
| Pile Driver (Impact)  | Upper Range | 1.518                   | 112                                   |
|   | Typical     | 0.644                   | 104                                   |
| Pile Driver (Sonic)   | Upper Range | 0.734                   | 105                                   |
|   | Typical     | 0.170                   | 93                                    |
| Large Bulldozer   |             | 0.089                   | 87                                    |
| Drill   |             | 0.089                   | 87                                    |
| Truck   |             | 0.076                   | 86                                    |
| Jackhammer  |             | 0.035                   | 79                                    |
| Small Bulldozer   |             | 0.003                   | 58                                    |
| Significance Threshold  |             | 0.2/0.08 <sup>1</sup>   | 80                                    |
| Notes: in/sec = inches per second; L <sub>v</sub> = the velocity level in decibels referenced to 1 microinch per second and based on the root mean square velocity amplitude; PPV = peak particle velocity<br><sup>1</sup> For normal residential buildings and for buildings more susceptible to structural damage, respectively.<br>Sources: Caltrans 2004:26, FTA 2006:12-12 |             |                         |                                       |

The required construction equipment for future projects is not known at this time, but could include maximum generation of vibration from trucks and bulldozers. According to the Federal Transit Administration (FTA), which

has developed guidance to promote the public welfare and protect property, vibration levels associated with the use of such equipment would be approximately 0.089 in/sec PPV and 87 VdB (referenced to 1 µin/sec and based on the root mean square velocity amplitude) at 25 feet, as shown in Table 3.11-7. Using FTA's recommended procedure for applying a propagation adjustment to these reference levels, predicted worst-case vibration levels would not exceed 0.2 in/sec PPV (Caltrans's recommended standard with respect to the prevention of structural damage for normal buildings), but would exceed 80 VdB (FTA's maximum-acceptable vibration standard with respect to human annoyance for residential uses) within 60 feet of vibration-sensitive receptors. Depending on the nature of future projects, existing vibration-sensitive receptors could be located adjacent to properties that could develop under the 2035 General Plan. Temporary, short-term vibration levels from project construction sources could exceed FTA's maximum-acceptable vibration standard of 80 VdB with respect to human response for residential uses (i.e., annoyance) at vibration-sensitive land uses. More importantly, if construction activities were to occur during more noise-sensitive hours, vibration from construction sources could annoy and/or disrupt the sleep of occupants of existing and proposed residences and expose persons to excessive groundborne vibration or groundborne noise levels.

Similarly, depending on the nature and location of future projects, new vibration-sensitive receptors could be located near an existing or future vibration-generating land use (e.g., railroad line, industrial facility). Vibration levels from existing or future vibration sources could exceed FTA's maximum-acceptable vibration standard of 80 VdB with respect to human response for residential uses (i.e., annoyance) at vibration-sensitive land uses.

Pile-driving could occur at some development sites, particularly within the Downtown Waterfront Area, where multi-story construction is anticipated to occur. This type of construction activity could produce high vibration levels (Table 3.11-7). The 2035 General Plan would accommodate development of existing developed properties, as well as development on vacant or mostly vacant parcels throughout the Planning Area.

The City anticipates development at the fringes of the City limits and Planning Area, in addition to focused infill development within the Downtown Waterfront Area. The City has identified parcels throughout the Downtown Waterfront Area, including sites north and south of SR 12 where infill development is anticipated under the 2035 General Plan. This includes properties that are near existing vibration-sensitive uses, such as residences and schools, as well as properties that may be developed in phases, with noise-sensitive residential uses included in earlier phases. In these cases, there could be temporary construction activity in areas directly adjacent to existing or planned noise-sensitive uses.

### **Relevant Policies and Programs of the 2035 General Plan**

- ▶ **Policy PHS-2.1:** New developments that propose vibration-sensitive uses within 100 feet of a railroad or heavy industrial facility to analyze and mitigate potential vibration impact, as feasible.
- ▶ **Policy PHS-2.2:** New developments that would generate substantial long-term vibration shall provide analysis and mitigation, as feasible, to achieve velocity levels, as experienced at habitable structures of vibration-sensitive land uses, of less than 78 vibration decibels.
- ▶ **Program PHS-1.5. Construction Noise Reduction Measures.** The City will require new developments proposing construction adjacent to existing noise-sensitive uses or close enough to noise-sensitive uses that relevant performance standards could be exceeded to incorporate feasible mitigation to reduce construction noise exposure. This may include additional limits on the days and times of day when construction can occur,

re-routing construction equipment away from adjacent noise-sensitive uses, locating noisy construction equipment away from noise-sensitive uses, shrouding or shielding impact tools, use of intake and exhaust mufflers and engine shrouds, construction of acoustic barriers (e.g., plywood, sound attenuation blankets), pre-drilling holes for placement of piles or non-impact pile driving where piles would be needed, and other feasible technologies or reduction measures necessary to achieve the City’s relevant performance standards.

**Conclusion**

The General Plan anticipates development and, as a necessary outcome of this development, both temporary and long-term sources of vibration. The General Plan also anticipates the potential for vibration -sensitive land uses to be developed in areas with some amount of existing vibration today, such as SR 12 and the Union Pacific Railroad. With implementation of the 2035 General Plan existing and planned vibration -sensitive uses could be exposed to substantial temporary construction-related vibration. Implementation of the 2035 General Plan would also involve generation of construction vibration – which could expose existing and planned vibration -sensitive uses to adverse, temporary construction-related vibration.

The 2035 General Plan requires use of project-specific vibration mitigation measures. Implementation of policies in the 2035 General Plan, as described above, would reduce the potential for vibration levels in areas of new vibration-sensitive land uses to exceed the standards contained in Policy PHS-2.2 (78 VdB). The General Plan establishes the mitigation approach and a performance standard for both generation of vibration and for exposure of vibration-sensitive uses to existing sources. Proposed policies of the 2035 General Plan would reduce vibration impacts. Although the policies and programs are designed to avoid substantial disturbances to vibration-sensitive receptors, the City anticipates that, despite implementation of feasible vibration reduction strategies, vibration-sensitive uses could be exposed to vibration in exceedance of the City’s standards. The impact is considered **significant**.

**Mitigation Measure**

The policies and programs of the 2035 General Plan represent all feasible mitigation. The impact is considered **significant and unavoidable**.

**IMPACT**     **Airport Noise Exposure.** *Future development of new noise-sensitive land uses would occur under the 2035*  
**3.11-5**        *General Plan within areas that are affected by noise from airport operations. The impact is **potentially***  
                     ***significant**.*

The Travis AFB Land Use Compatibility Plan (LUCP) and Air Installation Compatible Use Zone (AICUZ) Study show the location of noise contours identify incompatible land uses within each noise contour. As noted in the LUCP, new residential development is normally incompatible where noise exposure exceeds a potential future CNEL of 60 dB. This noise contour is located in the eastern portion of the City’s Planning Area. The LUCP also provides guidance for non-residential development, acknowledging that the acceptability relative to noise levels depends on the particular type of non-residential use. Office and retail development is marginally acceptable in areas with 65-70 dB CNEL, whereas commercial services, warehousing, wholesale trade, light industrial development is marginally acceptable in areas with 70+ dB CNEL. For lodging, the maximum acceptable interior noise level is 45 dB CNEL.

With implementation of the 2035 General Plan, future development of noise-sensitive uses (e.g., residential dwellings, schools, hospitals, parks, hotels, places of worship, libraries) would occur in areas with aircraft overflights associated with Travis AFB. If the City approves noise-sensitive uses in areas with substantial aircraft noise, this could create an adverse impact. The impact is **potentially significant**.

### **Relevant Policies and Programs of the 2035 General Plan**

- ▶ **Policy PHS-1.6:** Lands within the 65 CNEL noise contour of Travis AFB shall be maintained in agricultural, open space, commercial, industrial, or other uses permitted by Travis AFB Land Use Compatibility Plan (LUCP) and consistent with the recommendations of the Travis AFB Protection Element, including noise contours associated with future air base operations, as appropriate.
- ▶ **Program PHS-1.4:** Travis AFB Land Use Compatibility Review. The City will require new developments within areas addressed by the Travis AFB Land Use Compatibility Plan to submit plans for review and conditioning, as appropriate, by Travis AFB.

### **Conclusion**

The 2035 General Plan does not accommodate new residential development in areas identified in the Travis AFB LUCP within the 60-65 dB CNEL noise contour. There are existing developed areas with residences in this noise contour, but the City does not anticipate new residential within this noise contour area under the 2035 General Plan, with the exception of an undeveloped parcel northwest of the intersection of Lawler Ranch Parkway and Potrero Circle.

The 2035 General Plan Land Use Diagram does indicate that non-residential uses, including lodging, could be developed in areas exposed to the 65-70 dB CNEL noise contour. Interior noise levels no greater than 45 dB CNEL would be required to avoid a conflict for lodging. The 2035 General Plan includes land use restrictions relative to Travis AFB to avoid compatibility issues and review and conditioning for projects in areas affected by Travis AFB noise. With implementation of 2035 policies and programs, the impact is considered **less than significant**.

### **Mitigation Measure**

No mitigation is required.

# 3.12 POPULATION, EMPLOYMENT, AND HOUSING

## 3.12.1 IMPACTS AND MITIGATION MEASURES

### METHODOLOGY

The examination of population, employment, and housing conditions in this section is based on information from review of land use changes accommodated under the 2035 General Plan, as well as a review of available population, employment, and housing projections from the Local Economy & Demographics Background Report, under separate cover, (2011) and from the Association of Bay Area Governments (ABAG).

Implementation of the 2035 General Plan could accommodate an added population of 3,900, 1,800 new housing units, 4.2 million square feet of nonresidential building space, and 6,840 new jobs. The buildout population and employment assumption in the 2035 General Plan are an estimate of the total development capacity within the Planning Area if all parcels were developed consistent with the General Plan.

Population and employment growth accommodated under the 2035 General Plan is not, in and of itself, an environmental impact. However, there are indirect impacts associated with increased population, employment, and housing, such as increased travel demand that requires additional roadways and other transportation infrastructure and the associated air pollutant emissions and traffic noise, impacts related to public facilities and utilities expansions needed to serve new growth, and other impacts, each of which is addressed in each technical section of this EIR. These technical sections provide analysis of relevant environmental effects of implementing the 2035 General Plan. The indirect effects associated with the 2035 General Plan’s potential for inducing additional regional growth from the extension or construction of infrastructure and public services to serve population growth are discussed in Chapter 5, “Other CEQA Considerations.”

### THRESHOLDS OF SIGNIFICANCE

Based on Appendix G of the State CEQA Guidelines, a population, employment, and housing impact is considered significant if implementation of the 2035 General Plan would:

- ▶ induce substantial population growth in an area, either directly (by accommodating new homes and businesses) or indirectly (through the extension of roads or other infrastructure);
- ▶ displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere.

### Impact Analysis

|                  |   |
|------------------|---|
| IMPACT<br>3.12-1 | <p><b>Temporary Increase in Population and Subsequent Housing Demand during Construction.</b></p> <p><i>Implementation of the 2035 General Plan would generate a temporary increase in employment and subsequent housing demand from construction jobs. Because a substantial permanent relocation of these workers is not anticipated as a result of construction activity accommodated under the 2035 General Plan, neither substantial population growth nor an increase in housing demand in the region is anticipated from generation of these jobs. This impact is considered <b>less than significant</b>.</i></p> |
|------------------|---|

It is anticipated that implementation of the General Plan would involve construction and development of both residential and non-residential land uses. This activity could potentially generate a temporary increase in population and housing demand as a result of construction jobs. Land use change accommodated under the 2035 General Plan could occur as large single projects, several smaller projects, or a combination of both, depending on market conditions and other factors. The number of construction workers that could be employed locally during implementation of the General Plan is likely to vary, based on market demand and overall economic conditions. Construction could occur in a concentrated fashion in years when market conditions are favorable or could occur more evenly throughout this General Plan time horizon. More construction workers would be employed during peak periods, when more housing and business construction would be expected to occur, whereas fewer construction workers would be employed during non-peak periods.

According to the most current labor data available from the U.S. Census Bureau 2010 American Community Survey, 10,186 residents of Solano County were employed in construction (U.S. Census Bureau 2010). This pool of existing residents who are employed in the construction industry, as well as new residents that move to the area for other reasons, may be available during implementation of the 2035 General Plan. If construction workers from outside the region were employed at projects located within the Planning Area, the temporary nature of the work suggests that these workers would not change their residence to work at the subject site. A substantial permanent relocation of these workers is not anticipated as a result of construction activity accommodated under the 2035 General Plan. With the available construction workers available locally, and considering that the General Plan will be implemented over a long period of time, neither substantial population growth nor an increase in housing demand in the region is anticipated following generation of these jobs. Therefore, implementation of the 2035 General Plan would not require the construction of housing beyond that analyzed in this EIR.

## Conclusion

The temporary increase in population growth and housing demand associated with generation of construction jobs is a **less-than-significant** impact.

## Mitigation Measure

No mitigation is required.

**IMPACT 3.12-2** **Induce Population Growth.** *Implementation of the 2035 General Plan would accommodate population growth associated with development of residential land uses and indirectly through development of commercial, retail, office, and light industrial uses throughout the Planning Area. Because the 2035 General Plan provides a framework for the orderly and efficient long-term growth within Suisun City through the year 2035, substantial population and employment increases over existing conditions would be expected, and the 2035 General Plan would encourage substantial growth over the existing levels in the City. The level of population growth that could potentially be accommodated under the 2035 General Plan is less than that projected in the ABAG regional population projections. In addition, implementation of the 2035 General Plan would help create a substantially more balanced jobs/housing index by providing new housing and local jobs for existing and future residents. This impact would be **less than significant**.*

Implementation of the 2035 General Plan would accommodate population growth associated with future development of residential land uses and indirectly through future development of commercial, retail, office, and light industrial uses throughout the Planning Area that could attract additional residential development. ABAG

has developed population and employment projections that inform land use and transportation planning throughout the region. According to these projections, the City's population is expected to increase to 34,200 people in 2035 and employment is expected to increase from 3,080 jobs in 2010 to 4,520 jobs in the City (ABAG and Metropolitan Transportation Commission 2013). These totals represent an increase of 5,200 residents and 1,440 jobs over the 25-year period.

The City has provided land with the appropriate designations to accommodate housing needs, jobs, and commercial and civic services through 2035. The 2035 General Plan could accommodate a total population of approximately 32,400, 11,300 dwelling units, 10,900 local jobs, and 5.8 million square feet of non-residential development at buildout of the 2035 General Plan. Certain areas designated for urban use may or may not be developed between present and 2035. Some areas might be developed at the upper end of the density ranges, while other areas might develop at the lower end.

Overall, Solano County currently provides fewer jobs locally than the number of working residents. ABAG projections indicate that planned projects are expected to provide housing and employment opportunities that would improve the current jobs/housing balance by 2035. ABAG anticipates that the jobs/housing balance in Solano County would increase from 0.87 in 2010 to 1.02 in 2035 (ABAG and Metropolitan Transportation Commission 2013).

The discussion of jobs/housing balance relates to important factors in environmental health, economic and fiscal growth and stability, and quality of life. Commuting can cause traffic congestion, air quality degradation, greenhouse gas emissions, traffic noise, and other adverse physical environmental effects. The opportunity to live closer to the workplace with appropriate housing types close to jobs should help to reduce congestion and commute times. Balancing jobs and housing in a smaller area can increase the practicality of transit, bicycling, walking instead of automobile trips. However, these benefits do not necessarily occur through a numeric match between the number of local jobs and the number of local employees. In order to reduce automobile commuting and the associated environmental effects, jurisdictions may also need to consider a more nuanced approach that better correlates local jobs with the skills and interests of the local labor force, while providing opportunities for housing that is priced, sized, and located to serve the needs of local employers and employees. Although the term "jobs/housing balance" is typically used to refer to a relationship between jobs and housing units within any given community, the key relationship is between jobs and the number of employed residents within a community. Even if a community has a statistical balance between jobs and housing, sizeable levels of in-commuting and out-commuting are still possible especially where employment opportunities do not match the skills and educational characteristics of the local labor force (Atlanta Regional Commission 2002).

Jobs/housing balance is defined in a variety of ways. It can mean an adequate supply of housing of the types and costs to house workers employed in a defined geographic area. Jobs/housing balance can also be defined as adequate provision of employment in a defined area that generates enough local workers to fill the housing supply. An area that has too many jobs relative to its housing supply is likely (in the absence of offsetting factors) to experience substantial in-commuting, escalations in housing prices, and intensified pressure for additional residential development. Conversely, if an area has relatively few jobs in comparison to the number of employed residents, many of the workers are required to commute to jobs outside of their area of residence. As noted earlier, however, this balance also depends on the types of local jobs, the skills and interests of local workers, and the types of local housing (and not just absolute numbers).

Suisun City currently provides substantially fewer jobs locally than the number of working residents. In 2010, the City had approximately 9,450 housing units but only about 3,080 jobs, resulting in a jobs/housing ratio of 0.33 (ABAG and Metropolitan Transportation Commission 2013). There is less than one local job per members of the local labor force. Implementation of the 2035 General Plan would accommodate of up to 4.2 million square feet of employment generating uses, 1,800 dwelling units and 6,840 jobs. At buildout of the 2035 General Plan, the City could accommodate approximately 5.8 million square feet of employment generating uses, 11,300 dwelling units, and 11,300 jobs, resulting in a jobs/housing ratio of 0.96 or close to one job per household.

## Relevant Policies and Programs of the 2035 General Plan

The 2035 General Plan includes policies and programs that would improve Suisun City's jobs-workforce balance by attracting high-quality, local employment opportunities. The City will encourage development that improves the balance between local jobs and housing, including new commercial and industrial development, home-based businesses, business incubators, and other uses that produce high-quality local jobs. The City will consider the needs and the skills of Suisun City's workforce in economic development and redevelopment activities, place greater emphasis on attracting skilled production businesses that match the skills of Suisun City's workforce, and target industries that provide viable career ladders for local workers, from entry level through management positions.

## Conclusion

The 2035 General Plan provides a framework for the orderly and efficient long-term growth within Suisun City through the year 2035, substantial population and employment increases over the 2010 conditions would be expected, and the 2035 General Plan would encourage substantial growth over the existing levels. The level of population growth that could potentially be accommodated under the 2035 General Plan is less than that projected in the ABAG regional population projections. However, the level of job growth included in the 2035 General Plan is substantially more than current ABAG forecasts would indicate. Implementation of the 2035 General Plan would provide increased opportunities to use transit, bike, or walk to work in-lieu of driving and the opportunity to live close to the workplace afforded by providing housing close to jobs. Although there is no guarantee that residents would work locally, implementation of the 2035 General Plan would accommodate a more balanced jobs/housing index by providing new housing and local jobs for existing and future residents. Physical impacts associated with development of nonresidential land uses, such as traffic, air quality degradation, noise generation, greenhouse gas emissions, and increased demand for public services and utilities, are evaluated throughout this EIR since these land uses are considered to be part of the development of the 2035 General Plan. There is no significant impact that is not addressed comprehensively throughout this EIR. The impact is considered **less than significant**.

## Mitigation Measure

No mitigation is required.

|                         |   |
|-------------------------|---|
| <b>IMPACT</b><br>3.12-3 | <b>Displacement of Existing People or Housing.</b> <i>The 2035 General Plan supports reinvestment and infill development of vacant and underutilized properties. The 2035 General Plan does not propose displacement of people or housing. However, it is possible that some housing could be removed during buildout. The impact is considered <b>potentially significant</b>.</i> |
|-------------------------|---|

The 2035 General Plan supports reinvestment and infill development of vacant and underutilized properties in the Planning Area. The 2035 General Plan does not include policies that propose displacing existing housing within Suisun City. As noted in the Land Use Element, most neighborhoods in Suisun City neighborhoods are built out or nearly built out, and not likely to change substantially over the next couple of decades. The City will encourage reinvestment efforts that maintain and improve the functionality and attractiveness of these areas. The City has not elected to use this General Plan Update to encourage existing development to transition to another land use or to change the land use or development character of existing developed residential areas.

### **Relevant Policies and Programs of the 2035 General Plan**

The City's 2009-2014 Housing Element encourages preservation of the existing housing stock and neighborhoods. The strategic goals of the Housing Element include a goal to, "*maintain and improve the quality of the existing housing stock and preserve existing residential neighborhoods*" (City of Suisun City 2009). The 2035 General Plan does not change the approach envisioned in the 2009-2014 Housing Element where it relates to preservation and improvement of existing housing and neighborhoods.

### **Conclusion**

The 2035 General Plan does not propose to displace substantial numbers of housing or people necessitating the construction of replacement housing elsewhere. The 2035 General Plan does not propose converting established residential areas to a non-residential land use or redeveloping existing residential areas with new residences by removing existing dwelling units. The 2035 General Plan proposes policies and programs that facilitate additional residential development opportunities and a variety of housing types on undeveloped land, vacant land, underutilized parcels, and through infill and redevelopment. However, it is possible that some housing could be removed during buildout. The impact is considered **significant**.

### **Mitigation Measure**

The General Plan is intended to guide long-term land use change. There is no additional feasible mitigation that would prevent against the possibility of displacement. The impact is **significant and unavoidable**.

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## 3.13 UTILITIES AND SERVICE SYSTEMS, PUBLIC SERVICES, AND RECREATION

### 3.13.1 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

#### METHODOLOGY

Impacts related to utility and service systems, public services, and recreation that would result from buildout of the 2035 General Plan are evaluated by comparing existing infrastructure, its available capacity, and ability to serve future demand on utilities that would be caused by buildout. Once future demands have been estimated, the analysis determines whether the increased demand would result in the need for new or expanded facilities, the construction of which could possibly result in adverse impacts on the physical environment.

Evaluation of potential utility and service system impacts was based on a review of the following regional and local planning documents pertaining to Suisun City and its Planning Area:

- ▶ *City of Suisun City Community Facilities and Services Background Report* (City of Suisun City 2010),
- ▶ *City of Fairfield 2012 Municipal Service Review Update* (City of Fairfield 2012),
- ▶ *Suisun-Solano Water Authority Urban Water Management Plan* (SSWA 2011),
- ▶ *Fairfield-Suisun Sewer District Sewer System Master Plan* (Holmes International 2008),
- ▶ *Fairfield-Suisun Sewer District Sewer System Management Plan* (FSSD 2013), and
- ▶ *Fairfield-Suisun Unified School District 2010 Facility Master Plan* (F-SUSD 2011).
- ▶ *City of Suisun City Sewer System Management Plan* (City of Suisun City 2014).

#### THRESHOLDS OF SIGNIFICANCE

Based on Appendix G of the State CEQA Guidelines, an impact related to utilities and service systems, public services, and recreation is considered significant if the proposed project would:

- ▶ have insufficient water supplies available to serve the project from existing or permitted entitlements and resources, or require new or expanded entitlements;
- ▶ require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;
- ▶ require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could result in significant physical environmental effects;
- ▶ exceed wastewater treatment requirements of the applicable RWQCB;
- ▶ result in a determination by the wastewater treatment provider that serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments;
- ▶ generate solid waste beyond the capacity of existing landfills;
- ▶ violate Federal, State, or local statutes and regulations related to solid waste;

- ▶ result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for fire protection, police protection, schools, or parks;
- ▶ increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated; or
- ▶ include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

## IMPACT ANALYSIS

**IMPACT 3.13-1** **Increased Demand for Water Supplies.** *Implementation of the 2035 General Plan would increase water demand. Existing regulations require additional water conservation measures in new development and for large developments to demonstrate ongoing reliable water supply. SSWA would have sufficient water supplies available to serve buildout of the 2035 General Plan from existing or permitted entitlements in normal, single-dry, and multiple-dry water years. Considering existing regulations that require conservation and demonstration of water supply and that SSWA has sufficient supplies to meet demands, the impact is considered less than significant.*

Implementation of the 2035 General Plan would designate land uses that, if developed to full buildout, would increase water demand. Because specific development proposals for these land uses are not considered in this EIR, the exact increase in water demand water cannot determined. Based on the projected population at buildout of the 2035 General Plan (32,400) and demand factors presented in the Suisun-Solano Water Authority's (SSWA's) Urban Water Management Plan (UWMP), the total projected water demand at buildout of the 2035 General Plan would be approximately 4,251 acre-feet per year (afy) (SSWA 2011).

This impact analysis examines the estimated increase in water demand in relation to the existing water use conditions to estimate the availability and adequacy of water supply. Water supplies for the City are provided by the SSWA. The SSWA receives water supplies from the U.S. Bureau of Reclamation's Solano Project and the California Department of Water Resource's State Water Project (SWP), both of which are wholesaled by the Solano County Water Agency and Solano Irrigation District. Existing and projected water demands in the SSWA service area will be met by the water supplies described above and contract entitlements for each agency are summarized in Table 3.13-1. In 2010, the SSWA service area has a total of 4,144 afy of potable water supplies. This total is anticipated to increase to 6,000 afy by 2035.

SSWA currently does not use any groundwater in its system. SSWA delivered groundwater produced by a well owned by City of Suisun City until 2001. The need for the well was eliminated by the installation of the Benton Court and Suisun Valley Pumping Plants in 2000-2001. There are no plans to resume service from this well or the Suisun Valley in general due to high mineral content in the groundwater, sufficient alternative surface water supplies, and the need to replace miles of pipeline at considerable cost in order to convey water from the Suisun Valley back to the main SSWA service area (SSWA 2011:44).

The Fairfield-Suisun Sewer District (FSSD) oversees wastewater collection and treatment and water recycling services in the City of Fairfield, Suisun City, and Travis Air Force Base (see Impact 3.13-4). Currently there is no

reclaimed water use nor are there plans provide reclaimed water within the SSWA service area because there is no conveyance infrastructure in place to deliver recycled water from the FSSD Fairfield-Suisun Subregional Wastewater Treatment Plant (WWTP) to the SSWA service area (SSWA 2011:47). SSWA's capital improvement plans will in the future review the potential for future recycling and options for financing. Cooperation with the City of Fairfield and the FSSD would be required to implement any future actions, and neither of these agencies has planned water recycling projects (SSWA 2011:49).

The SSWA's UWMP, which was adopted in June 2011, addresses water supply and demand issues, water supply reliability, water conservation, water shortage contingencies, and recycled-water usage for the areas within SSWA's service area. The SSWA UWMP accounted for existing and future land uses in Suisun City and its Planning Area, as well as population growth projected by the Association of Bay Area Governments (ABAG) (SSWA 2011).

| <b>Table 3.13-1</b><br><b>SSWA Existing and Projected Water Supplies (afy)</b> |              |              |              |              |              |              |
|--|--------------|--------------|--------------|--------------|--------------|--------------|
| Water Supply Source  | 2010         | 2015         | 2020         | 2025         | 2030         | 2035         |
| Solano Project   | 1,600        | 1,600        | 1,600        | 1,600        | 1,600        | 1,600        |
| State Water Project  | 0            | 1,300        | 1,300        | 1,300        | 1,300        | 1,300        |
| Contract for State Water Project supplies                                      | 2,514        | 1,577        | 1,939        | 2,375        | 2,737        | 3,100        |
| <b>Total Supply</b>  | <b>4,114</b> | <b>4,477</b> | <b>4,839</b> | <b>5,275</b> | <b>5,637</b> | <b>6,000</b> |
| Note: afy = acre-feet per year<br>Source: SSWA 2011:42                         |              |              |              |              |              |              |

The SSWA water demand is anticipated to be less than available water supplies through 2035 in normal water years. As shown in Table 3.13-2, water supply is projected to be sufficient in normal water years over the UWMP's 20-year planning period (i.e., 2015 to 2035). Although Table 3.13-2 shows that water supply in single-dry and multiple-dry water years is insufficient to meet demand within the SSWA service area over the 20-year planning period, a joint powers agreement between SID and Suisun City ensures that water will be provided from the SID water supplies and therefore there will be sufficient water supplies to meet demands (SSWA 2011:66). A footnote in the UWMP indicates that:

“The apparent negative supply totals are a result of the methodology used for calculating supply reliability. In fact, per the joint powers agreement between SID and City of Suisun City the commitment has been made that water will be provided for the service area from the SID supply and therefore there will not in fact be a water shortage” (SSWA 2011:67).

Section 3.0 of the 1990 SSWA Implementation and Lease Agreement states that the "City and District may agree to add additional lands to the Joint Service Area covered by this Agreement. Such action shall be accomplished only by amendment to this Agreement or by a separate written agreement..." According to SID, this process would require future negotiations to an amendment of the JPA.

Water demand is anticipated to be less than available water supplies through 2035 in normal water years. A joint powers agreement between SID and Suisun City ensures that water will be provided from the SID water supplies and therefore there will be sufficient water supplies to meet demands. The impact is **less than significant**.

| <b>Table 3.13-2</b><br><b>Suisun-Solano Water Authority Comparison of Water Supply and Demand, 2015–2035</b>  |                                      |       |       |       |       |
|---|--------------------------------------|-------|-------|-------|-------|
| Total Water Supplies and Demand   | Projected Demands (afy) <sup>1</sup> |       |       |       |       |
|   | 2015                                 | 2020  | 2025  | 2030  | 2035  |
| <b>Normal Year</b>  |                                      |       |       |       |       |
| Total Supply  | 4,477                                | 4,839 | 5,275 | 5,637 | 6,000 |
| Total Demand  | 4,462                                | 4,198 | 4,235 | 4,232 | 4,251 |
| Difference (Supply minus Demand)  | 15                                   | 641   | 1,040 | 1,405 | 1,749 |
| <b>Single-Dry Year</b>  |                                      |       |       |       |       |
| Total Supply  | 4,432                                | 4,791 | 5,222 | 5,581 | 5,940 |
| Total Demand  | 4,462                                | 4,462 | 4,462 | 4,462 | 4,462 |
| Difference (Supply minus Demand) <sup>1</sup>   | -30                                  | 593   | 987   | 1,349 | 1,689 |
| <b>Multiple-Dry Year 1</b>  |                                      |       |       |       |       |
| Total Supply  | 4,253                                | 4,597 | 5,011 | 5,355 | 5,700 |
| Total Demand  | 4,462                                | 4,462 | 4,462 | 4,462 | 4,462 |
| Difference (Supply minus Demand) <sup>1</sup>   | -209                                 | 399   | 776   | 1,123 | 1,449 |
| <b>Multiple-Dry Year 2</b>  |                                      |       |       |       |       |
| Total Supply  | 4,164                                | 4,500 | 4,906 | 5,242 | 5,580 |
| Total Demand  | 4,462                                | 4,198 | 4,235 | 4,232 | 4,251 |
| Difference (Supply minus Demand) <sup>1</sup>   | -298                                 | 302   | 671   | 1,010 | 1,329 |
| <b>Multiple-Dry Year 3</b>  |                                      |       |       |       |       |
| Total Supply  | 3,492                                | 3,774 | 4,115 | 4,397 | 4,680 |
| Total Demand  | 4,462                                | 4,198 | 4,235 | 4,232 | 4,251 |
| Difference (Supply minus Demand) <sup>1</sup>   | -970                                 | -424  | -120  | 165   | 429   |
| Notes: afy = acre-feet per year<br><sup>1</sup> The negative differences are a result of the methodology used for calculating supply reliability. A joint powers agreement between SID and Suisun City ensures that water will be provided from the SID supply and therefore there will be sufficient water supplies to meet demands.<br>Sources: SSWA 2011; data compiled by AECOM in 2014 |                                      |       |       |       |       |

## Relevant Policies and Programs of the 2035 General Plan

The 2035 General Plan includes measures to ensure that sufficient water sources are made available to serve new development. The City will condition approval of new developments on the availability of sufficient water supply, storage, and fire flow (water pressure), per City standards and require demonstration of adequate long-term water supply for large development projects as defined in Water Code 10912(a) (also known as Senate Bills 610 and 221). The City will also require the use of water conservation technologies such as low-flow toilets, efficient clothes washers, and efficient water-using industrial equipment in new construction, in accordance with code requirements; encourage use of recycled water for outdoor irrigation, fire hydrants, and commercial and industrial processes; and require new development to incorporate climate-appropriate landscaping to reduce water demand. In addition, the City will comprehensively assess water supply and demand and identify a range of local conservation measures to be implemented through UWMP.

In addition, the 2035 General Plan includes policies committing the City to ongoing water supply planning with Solano County Water Agency, Solano Irrigation District, and other local jurisdictions and initiating a study with the SSWA and the Solano County Water Agency to determine the feasibility of extending a connection from the SSWA water treatment facility to Suisun City so that the City may directly utilize its Solano Project water entitlement. The City will also support FSSD efforts to explore the feasibility of using treated wastewater for irrigation in parks, landscaped areas, and other appropriate locations.

## Conclusion

Individual development projects proposed pursuant to the General Plan would be required to assess water supply availability during the environmental review process to ensure that the SSWA has sufficient water supplies to meet demand. Projects occurring under buildout would be required to demonstrate adequate and reliable water supplies and to consider the impact of new water consuming land uses in relation to existing and future demand.

The policies of the General Plan incorporate and reference the existing requirements of State law that require demonstration of adequate long-term water supply for large development projects as defined in Water Code 10912(a) (also known as Senate Bills 610 and 221). The requirements of California Water Code 10910 et seq. would be enforced at the time of project-level review under buildout for larger projects that meet the relevant thresholds provided in California Water Code Section 10912.

The City will condition approval of new developments on the availability of sufficient water supply, storage, and fire flow (water pressure), per City standards. In addition, General Plan policies and programs would reduce water supply demand by identifying conservation measures and requiring incorporation of climate-appropriate landscaping in new development as well as new parks and landscaping. The Green Building Code requires an overall 20% reduction in residential indoor potable water use (24 CCR Part 11, Section 4.303.1) and a 20% reduction in indoor potable and wastewater use for non-residential buildings (24 CCR Part 11, Section 5.303.2 and 5.303.4). These reductions would occur relative to the baselines for typical appliances and fixtures provided in the Code. Collectively, these policies and laws would apply to all new water consuming land uses that would occur under buildout.

As shown in Table 3.13-2, water supply is projected to be sufficient in normal water years over the UWMP's 20-year planning period (i.e., 2015 to 2035). Although Table 3.13-2 shows that water supply in single-dry and multiple-dry water years is insufficient to meet demand within the SSWA service area over the 20-year planning period, a joint powers agreement between SID and Suisun City ensures that water will be provided from the SID water supplies and therefore there will be sufficient water supplies to meet demands (SSWA 2011:66). Therefore, SSWA would have sufficient water supplies available to serve buildout of the 2035 General Plan from existing or permitted entitlements in normal, single-dry, and multiple-dry water years. In addition, the City will participate in ongoing water supply planning Solano County Water Agency, Solano Irrigation District, and other local jurisdictions and support the FSSD efforts to explore the feasibility of using treated wastewater in the City. This impact is considered **less than significant**.

## Mitigation Measure

No mitigation is required beyond compliance with 2035 General Plan policies and programs and existing regulations.

**IMPACT 3.13-2** **Increased Demand for Water Supply Treatment and Conveyance Facilities.** *Land use change contemplated under the 2035 General Plan would increase demand for water conveyance and treatment facilities, including water transmission mains, pumping stations, and storage tanks, and SSWA treatment facilities. Construction of new or expansion of existing water conveyance and treatment facilities could have adverse effects on the physical environment. This impact is considered **potentially significant**.*

Land use change accommodated under the 2035 General Plan would increase the local demand for water supply treatment and conveyance facilities and require the expansion and extension of water supply infrastructure to deliver services to individual land uses within Suisun City.

Currently there are four ( 4) welded steel storage tanks in the water system which are the following: Cement Hill Tank (2 million gallons), Gregory Hill Tank (2 million gallons), Sports Complex Tank (1.5 million gallons), and Suisun City Corporation Yard Tank (1 million gallons). The Cement Hill Tank is supplied by the Cement Hill Water Treatment Plants No. 1 and 2, which delivers water to Suisun City, the unincorporated area of Tolenas and the Suisun Valley. The Gregory Hill Tank receives its water from the Suisun City Distribution system which is pumped from the Benton Court Pumping Plant located in Old Town Suisun City with a pumping capacity of 1,000 gpm. The Gregory Hill Tank supplies water to the Suisun Valley through the Suisun Valley Pumping Plant at a rate of 400 gpm and/or gravity feeds back into the Suisun City distribution system. The Sports Complex Tank is a supplemental ground level storage tank with a pump to boost into the distribution system at 2,000 gpm. The Suisun City Corporation Yard tank is also a supplemental ground level storage tank with a pump to boost into the distribution system at 1,200 gpm. (SSWA 2014).

Water supply treatment to potable water standards is provided by SSWA's Cement Hill Water Treatment Plant where the water is treated and piped to the Suisun City. Current projections indicate a maximum daily demand of 11.7 mgd would be required to serve existing and future development within the SSWA service area. This demand includes development resulting from buildout of the City and its Planning Area and was calculated by SSWA's based on population projections identified in the City's 2009 General Plan Housing Element (SSWA 2011:12). As stated previously, the population projections presented in the City's General Plan Housing Element (37,400 people) are greater than population projections (32,400 people) anticipated at buildout of the 2035 General Plan. The current treatment capacity of the Cement Hill WTP is 8.5mgd and additional treatment capacity will be required to serve meet water treatment demands at buildout of the SSWA service area. This additional capacity can be achieved by upgrading the Cement Hill Water Treatment Plant, obtaining additional treatment capacity provided by service from the City of Fairfield water system, or replacing of the Gregory Hill Treatment Plant. Multiple pipeline extensions, upgrades to pumping stations, and the construction of additional storage tanks will also be required. SSWA anticipates that these facility improvements would occur over the planning horizon of the UWMP (i.e., 2010-2035) depending on the availability of funding from development fees and grants (SSWA 2011).

Water supply infrastructure, such as water transmission mains, pumping stations, and storage tanks, will be required in currently undeveloped areas where no such infrastructure currently exists and existing infrastructure would require upgrades to serve new development. In addition, new or expanded SSWA water treatment and conveyance facilities would be required to serve land uses accommodated under the 2035 General Plan. Construction of new or expansion of existing water treatment and conveyance facilities could have adverse effects on the physical environment.

Individual development projects proposed pursuant to the General Plan would be required to assess project impacts during the environmental review process to ensure that the City and SSWA has sufficient water supply treatment and conveyance facilities to meet demand. Each project applicant would be required to coordinate with, and meet the requirements of, the City and SSWA applicable requirements.

The construction and operation of new or extension of existing facilities or infrastructure has been analyzed at the program level throughout Section 3.0 of this EIR. The 2035 General Plan includes policies and programs, and this EIR includes mitigation measures, where necessary, to reduce or avoid impacts, as noted throughout Section 3.0 of this EIR. Although General Plan policies and programs will require infrastructure and facilities to be provided in a way that reduces environmental impacts, the extent of infrastructure required to serve future demand, depending on phasing of future development, could create significant impacts. Despite implementation of 2035 General Plan policies and programs and the application of necessary mitigation measures, construction and operation of new or expanded water supply conveyance facilities may result in significant environmental effects.

SSWA would construct additional water supply infrastructure, as necessary, to meet demand. SSWA would conduct a separate environmental analysis to analyze specific impacts and identify any required mitigation measures for construction and operation of their water treatment and conveyance facilities. Implementation of mitigation measures would be the responsibility of SSWA, and such measures would be implemented in accordance with the certified environmental documents. However, impacts could remain significant after implementation of mitigation (i.e., significant and unavoidable), or no feasible mitigation may be available to fully reduce impacts to a less-than-significant level. Because implementation of the 2035 General Plan would contribute to the need for construction of new or expansion of existing SSWA water treatment and conveyance facilities to provide potable water supplies to the City, implementation of the 2035 General Plan could contribute to currently unknown but potentially significant and unavoidable environmental effects. The impact is considered **significant**.

**Mitigation Measure**

Construction of new or expansion of existing SSWA water treatment and conveyance facilities to provide potable water supplies to the City could result in currently unknown but potentially significant environmental effects. The policies and programs of the 2035 General Plan and compliance with other relevant requirements represent all feasible mitigation. Therefore, the impact is considered **significant and unavoidable**.

**IMPACT 3.13-3**      **Exceed Wastewater Treatment Requirements of the San Francisco Regional Water Quality Control Board.** *Land use change contemplated under the 2035 General Plan would increase wastewater effluent discharged to wastewater systems. There are no land uses proposed in the 2035 General Plan that would be expected to generate wastewater of such poor quality and concentration or in such amounts that the Fairfield-Suisun WWTP's treatment systems would not be able to treat according to applicable water quality standards. This impact is considered **less than significant**.*

Wastewater treatment for the proposed project would be provided by the FSSD. The FSSD operates the Fairfield-Suisun Subregional WWTP. The WWTP provides a tertiary level of treatment and final effluent can be discharged directly into the Suisun Marsh, or temporarily stored in large, earthen reservoirs for later use in irrigation or utility applications.

FSSD is required to demonstrate compliance with water quality standards enforced by the San Francisco Bay Regional Water Quality Control Board (RWQCB). The FSSD collection system operates under Order No. R2-2013-0007 and NPDES Permit No. CA0038024, both of which identify stringent effluent limits for various pollutants of concern including copper, cyanide, chlorodibromomethane, and dichlorobromomethane. In August 2011, the FSSD discontinued use of chlorine to disinfect its wastewater, replacing it with ultra-violet disinfection. Since then, chlorodibromomethane and dichlorobromomethane effluent concentrations have been below detection limits and cyanide and copper effluent concentrations have been well below effluent limits (San Francisco Bay RWQCB 2013). (See Section 3.9, “Hydrology and Water Quality,” for further discussion of water quality standards).

## Conclusion

Land use change accommodated under the 2035 General Plan would increase wastewater effluent discharged to wastewater systems. There are no land uses proposed in the 2035 General Plan that would be expected to generate wastewater of such poor quality and concentration or in such amounts that the Fairfield-Suisun Subregional WWTP’s treatment systems would not be able to treat according to applicable water quality standards. In addition, individual development projects would be required to meet federal, state, and local wastewater discharge requirements. Therefore, implementation of the 2035 General Plan would not result in exceedance of the San Francisco Bay RWQCB’s wastewater treatment requirements. This impact is considered **less than significant**.

## Mitigation Measure

No mitigation is required.

**IMPACT 3.13-4**     **Construction of New or Expanded Wastewater Collection, Conveyance, and Treatment Plant Facilities.**  
*Land use change contemplated under the 2035 General Plan would increase wastewater flow that would increase the local demand for wastewater collection and conveyance facilities. Implementation of the 2035 General Plan would not result in an increase in wastewater flows that exceed the FSSD Fairfield-Suisun Subregional WWTP design capacity. However, wastewater conveyance infrastructure, such as pipes and pumping stations, will be required in currently undeveloped areas where no such infrastructure currently exists and existing infrastructure would require upgrades to serve new development. Construction of new or expansion of existing wastewater facilities could have adverse effects on the physical environment. This impact is considered **potentially significant**.*

Land use change contemplated under the 2035 General Plan would increase the local demand for wastewater collection and conveyance facilities and require the expansion and extension of wastewater infrastructure to deliver services to individual land uses within Suisun City. Wastewater collection and conveyance facilities would be provided by the FSSD and the FSSD sewer master plan anticipated wastewater flows generated by the City and the Planning Area based on existing land uses and future land uses accommodated under the 2035 General Plan (Holmes International 2008:1).

FSSD owns and operates gravity sewers and force mains ranging in size from 12-inches to 48-inches in diameter. Suisun City own and operate sewers 10-inches and smaller in diameter and Travis Air Force Base owns all on-site sewers. Individual development projects proposed pursuant to the General Plan would be required to assess project impacts during the environmental review process to ensure that the City and FSSD has sufficient

wastewater collection and conveyance facilities to meet demand. Each project applicant would be required to coordinate with, and meet the requirements of the City and FSSD applicable requirements.

Suisun City and its Planning Area are located within the FSSD's Suisun Basin and are served by Suisun Pump Station and three smaller stations: Lawler I Pump Station, Lawler II Pump Station, and Crystal Street Pump Station. Wastewater is conveyed from these pump stations to the Suisun Pump Station. As shown on Table 3.13-3, the total maximum pumping capacity of these pump stations is 38.96 million gallons per day (mgd).

| <b>Table 3.13-3</b><br><b>FSSD Pump Stations and Existing Pumping Capacity</b> |                        |
|--|------------------------|
| Pump Station   | Pumping Capacity (mgd) |
| Lawler Ranch I   | 0.36                   |
| Lawler Ranch II  | 1.1                    |
| Crystal Street   | 0.5                    |
| Suisun   | 37.0                   |
| <b>Total Capacity</b>  | <b>38.96</b>           |
| Notes: mgd = million gallons per day<br>Source: FSSD 2013                      |                        |

The Suisun Pump Station, which serves the City, Travis Air Force Base, and portions of the City of Fairfield, conveys 33.9 mgd of wastewater flows to the Fairfield-Suisun Subregional WWTP as of 2012 (City of Fairfield 2012:33). The capacity of Suisun Pump Station is anticipated be adequate to accommodate growth within the Suisun Basin until approximately 2021 (FSSD 2013:24). Wastewater flows at buildout of the Suisun Basin, including wastewater flows generated at buildout of the City and its Planning Area, are expected to increase to 48.8 mgd and the Suisun Pump Station will require additional pumping capacity to serve the basin. This additional capacity can be achieved by upsizing of the Suisun Pump Station and constructing additional force mains and gravity relief sewers (FSSD 2013).

Fairfield-Suisun Subregional WWTP has current design capacity of 23.7 mgd average dry-weather flow and the WWTP currently treats 12.2 mgd average dry-weather flow (City of Fairfield 2012:33). In the long term, the FSSD sewer system master plan estimates that at buildout of the FSSD service area, the average daily flow could range between 19.5 and 21.0 mgd (Holmes International 2008:13). Therefore, the Fairfield-Suisun Subregional WWTP would have sufficient capacity to treat wastewater flows generated at buildout of the FSSD service area, including flows generated by buildout of the 2035 General Plan.

Implementation of the 2035 General Plan would not result in the expansion of existing or construction of new wastewater treatment facilities; however, wastewater conveyance infrastructure, such as gravity sewer, force mains, and pumping stations, will be required in currently undeveloped areas where no such infrastructure currently exists and existing infrastructure would require upgrades to serve new development. Construction of new or expansion of existing wastewater facilities could have adverse effects on the physical environment.

The construction and operation of new or extension of existing facilities or infrastructure has been analyzed at the program level throughout Section 3.0 of this EIR. The 2035 General Plan includes policies and programs, and this EIR includes mitigation measures, where necessary, to reduce or avoid impacts, as noted throughout Section 3.0

of this EIR. Although General Plan policies and programs will require infrastructure and facilities to be provided in a way that reduces environmental impacts, the extent of infrastructure required to serve future demand, depending on phasing of future development, could create significant impacts. The specific environmental impacts of each phase of improvements to the wastewater infrastructure will be evaluated at the project level and is beyond the scope and purpose of a General Plan programmatic EIR. Despite implementation of 2035 General Plan policies and programs and the application of necessary mitigation measures, construction and operation of new or expanded wastewater conveyance facilities may result in significant environmental effects.

## Conclusion

FSSD would construct additional wastewater infrastructure, as necessary, to meet demand. FSSD would conduct a separate environmental analysis to analyze specific impacts and identify any required mitigation measures for construction and operation of their wastewater conveyance facilities. Implementation of mitigation measures would be the responsibility of FSSD, and such measures would be implemented in accordance with the certified environmental documents. However, impacts could remain significant after implementation of mitigation (i.e., significant and unavoidable), or no feasible mitigation may be available to fully reduce impacts to a less-than-significant level. Because implementation of the 2035 General Plan would contribute to the need for construction of new or expansion of existing FSSD wastewater infrastructure facilities to collect and convey wastewater flows generated in the City, implementation of the 2035 General Plan could contribute to currently unknown but potentially significant and unavoidable environmental effects. The impact is considered **significant**.

## Mitigation Measure

The policies and programs of the 2035 General Plan and compliance with other relevant requirements represent all feasible mitigation. The impact is considered **significant and unavoidable**.

**IMPACT 3.13-5**     **New or Expanded Storm Water Drainage Facilities.** *The 2035 General Plan is anticipated to accommodate a variety of land use changes, including intensification of development on existing sites, demolition of existing structures with replacement land uses, and changes from undeveloped lands to developed, urban uses. Each type of land use change would each contribute different relative amounts of stormwater runoff corresponding to the percentage of impervious surface added. The construction of new facilities and conveyance infrastructure or the expansion of existing facilities and infrastructure to handle this runoff could generate significant environmental effects. This impact is considered **potentially significant**.*

The 2035 General Plan is anticipated to accommodate a variety of land use changes, including intensification of development on existing sites, demolition of existing structures with replacement land uses, and changes from undeveloped lands to developed, urban uses. Each type of land use change would each contribute different relative amounts of stormwater runoff corresponding to the percentage of impervious surface added. The relative amount of impervious surface associated with development would range from low (e.g., wetlands/open space) to high (e.g., large commercial projects with large parking areas, major roads, etc.). The increased flow in stormwater would increase demand for stormwater conveyance and discharge facilities. (See Section 3.9, “Hydrology and Water Quality,” for further discussion of impacts related to stormwater management).

The construction and operation of new or extension of existing stormwater conveyance and discharge facilities has been analyzed at the program level throughout Section 3.0 of this EIR. The 2035 General Plan includes

policies and programs, and this EIR includes mitigation measures, where necessary, to reduce or avoid impacts, as noted throughout Section 3.0 of this EIR.

The City held a groundbreaking ceremony in April of 2014 for construction of an approximately 180,000 square-foot retail facility for Walmart. Existing conditions at this property included a drainage ditch oriented north to south through the site, which drained runoff from a relatively small area of a residential development called “Quail Glenn,” directly north of the retail site, as well as runoff from two storage facilities located at the northeast corner of the intersection of Walters Road and Petersen Road. Conveyance of this stormwater runoff south of the large retail site is via stormwater pipes under State Route 12 and through a residential development called, “Lawler Ranch,” which is located directly south of the large retail site, and ultimately outfalls at the canal south of the Lawler Ranch residential development. As part of the large retail project, the on-site ditch was filled and an underground bypass stormwater dual pipeline was installed to convey the above-mentioned stormwater runoff. Two on-site detention basins have been constructed to within the pipeline alignment at the middle and at the downstream end of this pipeline. As a part of this retail project, separate private storm drain pipelines were installed to address on-site stormwater runoff. These private storm drain pipelines outfall into the new downstream detention basin. In addition, a new 30” reinforced concrete storm drain pipe has been installed under State Route 12 to augment the existing 36” storm drain pipe under State Route to convey stormwater from the new downstream detention basin.

## Conclusion

Although General Plan policies and programs will require infrastructure and facilities to be provided in a way that reduces environmental impacts, the extent of infrastructure required to serve future demand, depending on phasing of future development, could create significant impacts. The specific environmental impacts of each phase of improvements to the drainage infrastructure will be evaluated at the project level and is beyond the scope and purpose of a General Plan programmatic EIR. Despite implementation of 2035 General Plan policies and programs and the application of necessary mitigation measures, construction and operation of new or expanded drainage facilities may result in significant environmental effects. The impact is considered **significant**.

## Mitigation Measure

The policies and programs of the 2035 General Plan and compliance with other relevant requirements represent all feasible mitigation. The impact is considered **significant and unavoidable**.

**IMPACT 3.13-6**     **Increased Demand for Solid Waste Disposal and Compliance with Solid Waste Regulations.** *Land use change accommodated under the 2035 General Plan would increase the population of Suisun City, with an associated increase in solid waste streams. Based on this generation rate, buildout could generate an additional 10.6 tons of solid waste per day (3,864 tons per year), conservatively estimated. Because Potrero Hills Landfill has sufficient permitted capacity to accommodate solid-waste disposal needs, no new facilities would need to be constructed to serve 2035 General Plan buildout. This impact is considered than **less than significant**.*

Land use change accommodated under the 2035 General Plan would increase the population of Suisun City by up to 4,600 individuals, with an associated increase in solid waste streams. In 2012, Suisun City disposed of a total of 10,603 tons of solid waste, or 23.0 tons per day (tpd) (California Department of Resources Recycling and Recovery [CalRecycle] 2012). CalRecycle estimates a solid-waste disposal generation rate of 4.6 pounds per day

per resident (CalRecycle 2012). Based on this generation rate, buildout could generate an additional 10.6 tons of solid waste per day (3,864 tons per year). This estimate is conservative (high) because recycling and waste diversion reduces this amount and is likely to increasingly reduce the waste stream that is sent to landfills in the future as more restrictive regulations require diversion of larger fractions of the waste stream.

The primary landfill that serves Suisun City is the Potrero Hills Landfill, which is located at 3675 Potrero Hills Lane in unincorporated Solano County just south of Suisun City. According to CalRecycle, the Potrero Hills Landfill has a maximum permitted throughput of 4,333 tpd and has a total maximum permitted capacity of 83.1 million cubic yards. The Potrero Hills Landfill has a remaining capacity of approximately 13.9 million cubic yards and an anticipated closure date of February 14, 2048 (CalRecycle 2013). With implementation of the California Green Building Code, which requires the reduction of construction waste and demolition debris by 50%, and implementation of other City recycling programs, such as curbside recycling of paper, plastics, and bottles, the life of the Potrero Hills Landfill will likely be extended beyond 2048.

## Conclusion

Because the estimated increase in throughput associated with buildout of the 2035 General Plan is estimated to increase this amount by only 10.6 tpd, the increase in solid waste disposal demand would be within the maximum daily throughput capacity of this facility (4,333 tpd). Based on available information, the Potrero Hills Landfill has adequate capacity to serve buildout of the 2035 General Plan. In addition, new development accommodated under the 2035 General Plan would comply with any applicable federal, state, or local solid waste regulations, including those related to solid waste diversion. Therefore, buildout under the 2035 General Plan is not anticipated to require the construction of new landfills. The impact is considered **less than significant**.

## Mitigation Measure

No mitigation is required.

**IMPACT 3.13-7** *Demand for Additional Fire Protection Facilities. Implementation of the 2035 General Plan would accommodate construction of new physical structures and population, which would create additional demand for fire protection services, over current demand levels. The increased demand for services would result in the need for new fire stations, the construction of which could result in adverse impacts on the physical environment. However, the environmental effects of construction such facilities are analyzed program level throughout the environmental subsections of Section 3.0 of this EIR and there are no additional significant impacts beyond that which is already fully addressed. This impact is considered **less than significant**.*

The City of Suisun City Fire Department provides fire protection services within the incorporated area of the City and the department owns and operates Station 47, which is located at 621 Pintail Drive.

Land use change accommodated under the 2035 General Plan would accommodate construction of new physical structures and population, which would create additional demand for fire protection services, over current demand levels. Fire protection services would be especially important in development areas with higher risk of wildfire. New development located in the south-central portion of the Planning Area east of Sunset Avenue and south of SR 12 and within the western portion of the Planning Area north and northwest of Cordelia Road and south of SR 12 would be located in areas identified as a high fire hazard.

The Suisun City Fire Department has considered the locations of two fire stations in order to best serve city residents and to respond to 90% of all calls within five minutes (Suisun City 2010). The precise location and characteristics of these fire stations have not been determined.

The EIR has used assumptions for the overall amount of acreage that could be disturbed by development under the General Plan and the overall amount of land use change and development that could occur at buildout. Because the new fire stations would be constructed within the footprint of development envisioned by the 2035 General Plan, the construction and operation of the new fire stations has been analyzed program level throughout Section 3.0 of this EIR. The 2035 General Plan includes mitigating policies and programs, where necessary, that would reduce or avoid impacts, as noted throughout Section 3.0 of this EIR.

## Conclusion

There is no additional significant impact related to construction of these facilities beyond that which is comprehensively analyzed throughout this EIR. As appropriate, future facility construction plans would be subject to project-level CEQA analysis and mitigation, further ensuring compliance with regulations and allowing additional opportunities for mitigation, if necessary. The impact is considered **less than significant**.

## Mitigation Measure

No mitigation is required.

**IMPACT 3.13-8**     **Increased Demand for Law Enforcement Facilities, Services, and Equipment.** *Implementation of the 2035 General Plan would increase the demand for law enforcement facilities and services. The increased demand for services could result in the need for new police protection facilities, the construction of which could have adverse impacts on the physical environment. However, the environmental effects of construction such facilities are analyzed program level throughout the environmental subsections of Section 3.0 of this EIR and there are no additional significant impacts beyond that which is already fully addressed. This impact is considered **less than significant**.*

Police protection services within the City of Suisun City are provided by the City of Suisun City Police Department. The police station is located at 701 Civic Center Boulevard, adjacent to City Hall. In addition, the Constable Anson Burdick Center, located at 1101 Charleston Street, is a Police Department Substation within the Peterson Ranch Subdivision. Currently, the Suisun City Police Department has no plans to upgrade or reconstruct the police station or the Burdick Center (Suisun City 2010).

Land use change accommodated under the 2035 General Plan would result in the development of new homes, businesses, and other facilities in the city. This development as well as new residences and visitors would result in the increased need for police protection services, potentially resulting in the need for additional police protection facilities, the construction of which could have adverse impacts on the physical environment.

The EIR has used assumptions for the overall amount of acreage that could be disturbed by development under the General Plan and the overall amount of land use change and development that could occur at buildout. Because the new police protection facilities would be constructed within the footprint of development envisioned by the 2035 General Plan, the construction and operation of the new facilities has been analyzed program level

throughout Section 3.0 of this EIR. The 2035 General Plan includes mitigating policies and programs, where necessary, that would reduce or avoid impacts, as noted throughout Section 3.0 of this EIR.

## Conclusion

There is no additional significant impact related to construction of these facilities beyond that which is comprehensively analyzed throughout this EIR. As appropriate, future facility construction plans would be subject to project-level CEQA analysis and mitigation, further ensuring compliance with regulations and allowing additional opportunities for mitigation, if necessary. The impact is considered **less than significant**.

## Mitigation Measure

No mitigation is required.

**IMPACT 3.13-9** *Increased Demand for Public School Facilities and Services. Implementation of the 2035 General Plan would accommodate new residential development in Suisun City, which would increase population, including school-aged children requiring school services. The increased demand for services could result in the need for new or expanded school facilities, the construction of which could have adverse impacts on the physical environment. However, the environmental effects of such facilities expansion are analyzed program level throughout the environmental subsections of Section 3.0 of this EIR and there are no additional significant impacts beyond that which is already fully addressed. In addition, school impact fees will be collected in accordance with SB 50 to address increased demand for educational services. This impact is considered less than significant.*

Implementation of the 2035 General Plan would accommodate new residential development in Suisun City, which would increase population, including school-aged children requiring school services. School services in Suisun City are provided by the Fairfield-Suisun Unified School District (F-SUSD). As shown on the F-SUSD school attendance boundaries maps, students in the city attend Crescent Elementary School, Dan O’Root Elementary School, Suisun Elementary School, Tolenas Elementary School, Crystal Middle School, Armijo High School, and Rodriquez High School. These schools are currently operating below design capacity.

F-SUSD prepared a facility master plan in 2010 to provide updated enrollment, school capacity, student generation rates, and to determine the approximate number of new students generated by new residential development between 2011 and 2017. The F-SUSD projects that enrollment at the elementary schools, middle school, and high schools that serve the city are expected to decline or generally remain at design capacity between 2011 and 2017 (F-SUSD 2011). If increased enrollment beyond 2017 leads to the need to expand or construct new facilities, there could potentially be physical environmental impacts associated with such expansion and construction.

The EIR has used assumptions for the overall amount of acreage that could be disturbed by development under the General Plan and the overall amount of land use change and development that could occur at buildout. Because the new school facilities would be constructed within the footprint of development envisioned by the 2035 General Plan, the construction and operation of the new facilities has been analyzed program level throughout Section 3.0 of this EIR. The 2035 General Plan includes mitigating policies and programs, where necessary, that would reduce or avoid impacts, as noted throughout Section 3.0 of this EIR. There is no additional

significant impact related to construction of these facilities beyond that which is comprehensively analyzed throughout this EIR.

New development projects would be assessed developer fees in accordance with Senate Bill (SB) 50 (1998). Developer fees may be used to finance new schools and equipment and to reconstruct existing facilities to maintain adequate housing for all F-SUSD’s students.

**Conclusion**

The actual location, number, and design of new schools that may be needed over the course of General Plan implementation is not knowable at this time. This will depend on the pace, location, and character of residential development, future regulations and standards of the California Department of Education, and changes in the City’s demographics, among other factors. As appropriate, future facility construction plans would be subject to project-level CEQA analysis and mitigation, further ensuring compliance with regulations and allowing additional opportunities for mitigation, if necessary. School impact fees would be collected in accordance with SB 50 (1998) to ensure the development of adequate school facilities, and State law dictates that payment of these fees is considered to be adequate mitigation under CEQA (California Government Code Section 65996). Therefore, this impact is considered **less than significant**.

**Mitigation Measure**

No mitigation is required.

|                   |  |
|-------------------|--|
| IMPACT<br>3.13-10 | <p><b>Need for New or Expanded Parks and/or Recreation Facilities and/or Recreation Facilities and Potential for Accelerated Deterioration of Existing Parks.</b> <i>Implementation of the 2035 General Plan would result in the development of new residences in Suisun City, which would add new population and increase demand for new and existing parks, as well as recreation facilities. The construction of new parks and recreation facilities could have adverse impacts on the physical environment. In addition, this additional population would be likely to use existing park facilities potentially resulting in the accelerated physical deterioration of existing facilities. However, the environmental effects of such facilities expansion are analyzed throughout program level the environmental subsections of Section 3.0 of this EIR and there are no additional significant impacts beyond that which is already fully addressed. In addition, dedication of parkland or payment of in-lieu fees could also be used by the City to improve, expand, and maintain existing City parks to ensure that accelerated deterioration does not occur. This impact is considered <b>less than significant</b>.</i></p> |
|-------------------|--|

Implementation of the 2035 General Plan would result in the development of new residences in Suisun City, which would add new population and increase demand for new and existing parks, as well as recreation facilities. Suisun City maintains community and neighborhood parks varying in size, and generally distributed throughout the community. The City contains 48.0 acres of community parks and 47.7 acres of neighborhood parks for a total of 95.7 acres of active parks. This total equates to a park ratio of approximately 3.4 acres of parks per 1,000 City residents. Suisun City uses the Quimby Act standard of 3 to 5 acres of community and neighborhood parks for every 1,000 residents living in the city to guide parkland development. The City is currently meeting the Quimby Act park ratio standard as of 2012.

Increased demand for parks and recreation facilities would require the development of new parks, the construction of which could result in adverse impacts on the physical environment. In addition, this additional population would be likely to use existing park facilities. It is likely that, for local and community-serving parks, residents would use park facilities closest to their homes. Regional serving park facilities would be anticipated to have a broader draw. If new parks are not developed to meet new demand or if existing park facilities are not properly maintained, it is possible that population growth in Suisun City could accelerate the physical deterioration of existing facilities.

The EIR has used assumptions for the overall amount of acreage that could be disturbed by development under the General Plan and the overall amount of land use change and development that could occur at buildout. Because the new park facilities would be constructed within the footprint of development envisioned by the 2035 General Plan, the construction and operation of the new parks has been analyzed program level throughout Section 3.0 of this EIR. The 2035 General Plan includes mitigating policies and programs, where necessary, that would reduce or avoid impacts, as noted throughout Section 3.0 of this EIR. There is no additional significant impact related to construction of these facilities beyond that which is comprehensively analyzed throughout this EIR.

The City requires new development to provide parkland to meet the demands of new residences (i.e., 3 to 5 acres of community and neighborhood parks for every 1,000 residents living in the city) or pay in-lieu fees, which would aid in providing an increased amount of parkland such that the likelihood of overuse by new residents and accelerated physical deterioration of existing facilities would be reduced. In-lieu fees provided by new development could also be used by the City to improve, expand, and maintain existing city parks to ensure that accelerated deterioration does not occur.

## Conclusion

There is no additional significant impact related to construction of these facilities beyond that which is comprehensively analyzed throughout this EIR. As appropriate, future facility construction plans would be subject to project-level CEQA analysis and mitigation, further ensuring compliance with regulations and allowing additional opportunities for mitigation, if necessary. The impact is considered **less than significant**.

## Mitigation Measure

No mitigation is required.

## REFERENCE

Suisun-Solano Water Authority (SSWA). 2014. Letter to John T. Kearns dated November 21, 2014.

## 3.14 TRAFFIC AND TRANSPORTATION

### 3.14.1 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

#### METHODOLOGY

This analysis of impacts associated with implementing the 2035 General Plan is based on the following methodologies.

#### Roadway Network Impact Analysis

##### *Traffic Capacity Analysis*

The traffic capacity analysis is based on peak-hour and daily roadway segment forecasts for the year 2035, using 2010 traffic volumes as the baseline and the Fairfield Travel Demand Model as the forecasting tool. The Fairfield Travel Demand Model was developed in 2012, and includes the City of Suisun City. The model maintains consistent gateway travel characteristics with the Solano Transportation Authority's Solano-Napa Travel Demand Model, but is more detailed in the Fairfield and Suisun City areas, and was validated to local Fairfield and Suisun City traffic conditions. The traffic forecasts incorporate land use change anticipated under the 2035 General Plan and several new roadway connections, including Railroad Avenue between Marina Boulevard and Main Street, a new West Street collector roadway between Main Street and Cordelia Street, and a new connection between Civic Center Drive and Marina Boulevard, near the waterfront. Several other roadway widenings from 2 to 4 lanes are assumed, including Pennsylvania between SR 12 and Cordelia Street, Cordelia Street between Main Street and Pennsylvania Street, and Railroad Avenue (current two-lane sections). State Route (SR) 12 is ultimately planned to be widened to six lanes between I-80 and Pennsylvania Avenue, with new interchanges at Beck Avenue and Pennsylvania Avenue as part of the I-80/I-680/SR 12 Interchange Project. However, in the 2035 forecasts, only the third eastbound lane between I-80 and Pennsylvania Avenue is assumed, based on the scope of Phase 1 of that project and the current Solano Transportation Agency Regional Transportation Improvement Plan (STA RTIP) project funding plan.

Two additional improvements are shown in the 2035 General Plan circulation network, but were not directly modeled: a new roadway extending south from Peterson Road and connecting to Walters Road between Peterson Road and SR 12; and a new interchange on SR 12 east of Walters Road. These facilities were not included in the forecasting because (1) they are conceptual improvements that would require more detailed planning; (2) they are outside the City Limits (although inside the City's Sphere of Influence); and (3) the STA RTIP does not include the new interchange on either the Tier I or Tier II project list.

The capacity analysis compares the 2035 peak-hour segment volumes to the roadway segment capacities, using the roadway capacities developed for the Fairfield Travel Demand Model. These capacities are generally 1,400 vehicles per lane for Expressways (SR 12), 900 vehicles per lane for arterials, and 800 vehicles per lane for collectors. Vehicular transportation level of service (LOS) is based on a volume-to-capacity ratio, with a v/c ratio of less than 0.59 equal to LOS A, v/c of 0.60 – 0.69 = LOS B, v/c of 0.70 – 0.79 = LOS C, v/c of 0.80 – 0.89 = LOS D, v/c of 0.90 – 0.99 = LOS E, and v/c of 1.00 or greater equal to LOS F. Daily volumes are also reported, along with estimated daily roadway capacities (see Appendix F for details).

## ***Congestion Management Program System Impact Analysis***

The Congestion Management Program (CMP) system in the study area includes SR 12 and Walters Road. The traffic capacity analysis described above covers both of these roadways. The CMP analysis methodology is the 2010 Highway Capacity Manual segment analysis for Walters Road in Suisun City, and for SR 12. For Walters Road to the north of Suisun City, the CMP analysis method is a Transportation Research Board Circular 212 analysis of the Walters Road/Air Base Parkway intersection (essentially, an intersection volume-to-capacity calculation).

## ***Roadway Network Policy Analysis***

This analysis reviews the 2035 General Plan goals, objectives, policies, and programs relating to development, operation, and maintenance of the roadway network for consistency with other regional agencies' planning efforts.

## ***Bicycle and Pedestrian Impact Analysis***

The analysis of bicycle and pedestrian impacts focuses on the 2035 General Plan's proposed bicycle and pedestrian networks and the goals, objectives, policies, and programs supporting the development and maintenance of these facilities.

## ***Transit Impact Analysis***

The analysis of transit impacts reviews the 2035 General Plan's proposed goals, objectives, policies, and programs relating to the provision of transit service in the city and for consistency with other regional agencies' planning efforts. The impact analysis in this EIR considers the benefits of implementing 2035 General Plan goals, objectives, policies, and programs.

## **THRESHOLDS OF SIGNIFICANCE**

Based on Appendix G of the State CEQA Guidelines, the proposed project would result in a potentially significant impact if it would:

- ▶ Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit. For the purposes of this impact assessment, the following thresholds are used:
  - For roadways under Suisun City's jurisdiction, an impact is significant if it causes the roadway segment to deteriorate from LOS E or better to LOS F (consistent with 2035 General Plan Policy T-1);
  - For roadways under the City of Fairfield's jurisdiction, an impact is significant if it causes the roadway segment to deteriorate from LOS D or better to LOS E or worse for arterials (based on Fairfield General Plan Objective CI-3).

- For roadways under Solano County’s jurisdiction, an impact is significant if it causes the roadway segment to deteriorate from LOS E or better to LOS F (consistent with the Suisun City threshold, as Solano County does not maintain a LOS standard).
  - For routes under Caltrans jurisdiction (SR 12), an impact is significant if it causes the route to fall from LOS C/D or better to LOS D or worse, consistent with the standard in the *Guide for the Preparation of Traffic Studies, 2002* (Caltrans).
- ▶ Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways. For the purposes of this impact assessment, an impact is significant if causes a roadway to exceed the CMP standards, as follows:
    - SR 12 in Suisun City: LOS F
    - Walters Road between Peterson and Bella Vista: LOS E
    - Walters Road at Air Base Parkway: LOS E
  - ▶ Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.
  - ▶ Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks;
  - ▶ Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses; or,
  - ▶ Result in inadequate emergency access.

## IMPACT ANALYSIS

Implementation of the 2035 General Plan would generate vehicular trips. Residents of Suisun City would be anticipated to drive to jobs, services, and other destinations. Destination land uses (commercial, civic, etc.) in the Planning Area would attract trips from within the Planning Area, as well as areas outside the Planning Area.

The environmental effects associated with the increase in travel demand include criteria air pollutants and toxic air contaminants associated with vehicle trips, greenhouse gas (GHG) emissions associated with increases in vehicle miles traveled (VMT), and transportation noise along local and regional roadways. As with population growth, increase in travel demand in and of itself is not an adverse physical environmental impact. The environmental impacts are associated with the burning of fossil fuels necessary to power vehicles, the noise made by engines and interaction with the roadway, and other physical outcomes of an increase in travel demand – both during construction and operational phases.

The increase in travel demand associated with buildout of the 2035 General Plan is analyzed throughout this EIR. The transportation analysis supporting the 2035 General Plan and this EIR takes into account regional growth, as well as local land use change in Suisun City.

The 2035 General Plan includes a broad range of policies and programs designed to reduce travel demand, along with various other co-benefits, including improving fiscal sustainability, improving public health, encouraging local economic development, reducing household transportation costs, providing convenient shopping and cultural opportunities, and improving the overall local quality of life. For example, as directed by the General Plan, new developments are required to incorporate site planning, land use strategies, thoughtful community design components, non-vehicular transportation improvements, a highly connected transportation network, and other policies to reduce vehicular travel demand.

Transportation efficiency is directly tied to land use mix, density of development, urban design, and other factors. Travel demand is affected by street pattern, block size, streetscape improvements, and a variety of other community design features. Strategies to manage travel demand include, but are not limited to: transit improvements; walking and cycling improvements; parking management and pricing; increasing density; mixing land uses; and placing new development closer to existing destinations.

The relationships between density, mix of land uses, urban design, and the quality of the non-automobile transportation network, on one hand, and VMT, on the other, is complex. Although there is extensive literature showing that VMT can be reduced with density, land use mix, a connected transportation network, access to employment and regional destinations, and transit-supportive development patterns, among other factors (see work by Reid Ewing, Robert Cervero, Susan Handy, Lawrence Frank, and Gary Pivo, among others<sup>1</sup>), these factors have varying levels of influence on travel demand. The implementation of General Plan policies is anticipated to reduce travel demand, but it is difficult to predict how much.

Whether Suisun City residents would commute to jobs outside the city is unknown, but would likely be influenced by commute times, the price of fuel, and other social and economic factors outside the City's control. The 2035 General Plan allows a mix of uses that may allow future residents to accomplish more tasks with shorter trips or by walking or biking.

Please refer also to Sections 3.2, 3.5, and 3.11, which identify adverse physical environmental effects associated with increases in travel demand. Section 3.2, "Air Quality," comprehensively analyzes and provides feasible mitigation for air pollutant emissions associated with 2035 General Plan vehicular trips, during both construction and operational phases. Section 3.5, "Greenhouse Gas Emissions," comprehensively analyzes and provides feasible mitigation for GHG emissions associated with 2035 General Plan vehicular trips, during both construction and operational phases. Section 3.11, "Noise and Vibration," comprehensively analyzes and provides feasible mitigation for noise and vibration impacts associated with 2035 General Plan vehicular trips, during both construction and operational phases.

Other than the comprehensive analysis of environmental effects associated with the increase in travel demand attributable to the 2035 General Plan, there are no other adverse physical environmental impacts associated with this increase in travel demand.

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<sup>1</sup> Reid Ewing and Robert Cervero. 2001. "Travel and the Built Environment" Transportation Research Record, 1780, Paper No. 01-3515. Robert Schneider, Kevan Shafizadeh, and Susan Handy. 2012 (December). "Methodology for Adjusting ITE Trip Generation Estimates for Smart-Growth Projects. California Smart-Growth Trip Generation Rates Study. University of California, Davis. U.S. Environmental Protection Agency. 2013 (June). Our Built and Natural Environments: A Technical Review of the Interactions among Land Use, Transportation, and Environmental Quality. Second Edition. UC Davis Institute of Transportation Studies. Richard Lee, Joshua Miller, Rachel Maiss, Mary Campbell, Kevan Shafizadeh, Deb Niemeier, and Susan Handy. 2011 (September). Evaluation of the Operation and Accuracy of Five Available Smart Growth Trip Generation Methodologies. Research Report – UCD-ITS-RR-11-12.

The following analysis provides specific assessment of affected roadways and intersections in the vicinity of the Planning Area.

Some jurisdictions use LOS for assessing significant impacts under the California Environmental Quality Act (CEQA). Recent changes to the CEQA Guidelines recognize that each lead agency has the discretion to choose its own metric of analysis of impacts to its transportation system. Vehicular level of service measured using traditional methods may or may not be an applicable measure of the actual effectiveness of the transportation system.

The City will use LOS to determine fair-share impact fees, road rights-of-way, and facility planning. But, Suisun City will not use vehicular LOS alone in determining CEQA impacts. LOS analysis still may be required to examine indirect CEQA impacts of traffic generation (air pollution, noise, stormwater runoff, etc.). This change in emphasis of traffic congestion as a CEQA impact “is appropriate because an increase in traffic, by itself, is not necessarily an indicator of a potentially significant environmental impact,” and mitigating traffic congestion impacts by increasing roadway capacity can have substantial environmental effects. The City will continue address congestion, as necessary, but will not focus on traffic LOS analysis as a direct impact within the context of CEQA documentation.

**IMPACT 3.14-1**     **Roadway Traffic Capacity – Non-Caltrans Roadways.** *Implementing the 2035 General Plan would increase traffic volumes on non-Caltrans roadways within Suisun City, the City of Fairfield, and Solano County. On one roadway segment, Walters Road south of Air Base Parkway, the projected LOS would exceed the City of Fairfield's arterial LOS standard of D, falling to LOS E. This is considered a **significant cumulative** impact and the contribution of the 2035 General Plan is **cumulatively considerable**.*

Compared to existing conditions, traffic volumes with implementation of the 2035 General Plan would increase substantially. However, with the one exception of Walters Road near Air Base Parkway in Fairfield, all local jurisdiction (non-Caltrans) roadways are projected to meet their respective LOS standards (see Appendix F for details). Walters Road is part of the regional Jepson Parkway corridor, which has been planned as a regional connector between the Cities of Suisun City, Fairfield, and Vacaville. The volume on the northern section of Walters Road near Air Base Parkway is projected to grow under the 2035 scenario without implementation of the 2035 General Plan (assuming implementation of the 1992 General Plan) case as well. However, in the 2035 scenario without implementation of the 2035 General Plan, the volume remains under the LOS D/E threshold, at  $v/c=0.89$ , whereas in 2035 with the 2035 General Plan, the volume exceeds the LOS D/E threshold, at  $v/c=0.93$ . The volume growth in both cases is generated by land use change in both cities, and reflects trip making between compatible uses both within Fairfield and between Fairfield and Suisun City. Based on the City of Fairfield's LOS D standard for arterial roadways, this is considered a **significant cumulative** impact and the contribution of the 2035 General Plan is **cumulatively considerable**.

### **Relevant Policies and Programs of the 2035 General Plan**

Suisun City has a long history of cooperative transportation planning with the neighboring City of Fairfield, as evidenced by the partnership in planning for the Jepson Parkway. The following 2035 General Plan policies and programs will help reduce travel demand throughout the Planning Area. Implementation of 2035 General Plan policies and programs will help to minimize the impact of Suisun City traffic on Walters Road (Jepson Parkway) in Fairfield.

- ▶ **Policy T-1.8:** The City will consult with other agencies, such as the Solano Transportation Authority, Solano County, Caltrans, and the Metropolitan Transportation Commission on assessing travel demand impacts to facilities managed by other agencies. The City will collaborate as a part of a coordinated regional program on collection of impact fees for regional transportation improvements.
- ▶ **Program T-1.3: Transportation Funding and Implementation.** The City will maintain and implement transportation plans, including the Capital Improvement Program. The City will collaborate with Caltrans, STA, MTC, Solano County, Fairfield, and other relevant agencies to plan transportation improvements with the goal of maintaining or increasing the level of regional funding for transportation improvements in the Planning Area.
- ▶ **Policy T-3.1:** The City will collaborate with other local, regional, and state agencies, as well as employers to encourage carpooling, carpool parking, flexible work schedules, ridesharing, and other strategies to reduce commute period travel demand.
- ▶ **Policy T-3.2:** The City will encourage new developments and public facility investments designed to minimize vehicle trips and vehicle miles traveled.
- ▶ **Policy T-3.3:** The City will support programs to provide education, information, facilities, and incentives to encourage City employees to walk, bike, or take transit to work, as funding is available.
- ▶ **Policy T-3.4:** The City's analytical methods, review requirements, impact fees, and investments will be designed and implemented, in part, to reduce VMT by Suisun City residents and to local commercial and employment uses.
- ▶ **Policy T-3.5:** The City's Traffic Impact Fee Program will be designed to provide incentives for new developments that are located and designed to reduce vehicular travel demand.
- ▶ **Policy T-3.6:** New developments that would accommodate 100 full- or part-time employees or more are required to incorporate feasible travel demand management strategies, such as contributions to transit/bike/pedestrian improvements; flextime and telecommuting; a carpool program; parking management, cash out, and pricing; or other measures, as appropriate, to reduce travel demand.
- ▶ **Program T-3.1: Trip Reduction Program.** As resources are available, Suisun City will adopt a trip reduction ordinance, consistent with the 2035 General Plan and coordinated with the City's impact fees/Off-site Street Improvement Program.
- ▶ **Policy PHS-4.1:** The City will coordinate with the Association of Bay Area Governments, Solano County, the Bay Area Air Quality Management District, and California Air Resources Board, and other relevant agencies, to orient its plans, policies, and regulations to take best local advantage of regional and statewide AB 32-related infrastructure investment and other programs.
- ▶ **Policy PHS-4.2:** The City will guide land use change, direct investments, and apply its fees and programs to encourage more GHG-efficient development patterns, as feasible.
- ▶ **Policy PHS-4.3:** The City will actively pursue funding for transportation systems that promote public transit, bicycling, and pedestrian travel and other needed infrastructure, building and public realm energy efficiency upgrades, renewable energy production, land use-transportation modeling, and other projects to reduce local GHG emissions.

- ▶ **Policy PHS 4.4:** The City will collaborate with the Association of Bay Area Governments, Solano County, the Bay Area Air Quality Management District, and California Air Resources Board, and other relevant agencies, where feasible, to fund transportation and other infrastructure and service improvements that increase local GHG efficiency
- ▶ **Policy PHS-4.5:** The City will, as feasible, conduct regionally coordinated land use, transportation, and public facility planning to support GHG-efficient local development.
- ▶ **Policy PHS-6.2:** The City will ensure that the land use pattern and community design support walking and biking to promote physical activity by providing safe infrastructure such as sidewalks, bike lanes, and trails, and by providing access to parks, recreation services, and open space.
- ▶ **Policy PHS-6.3:** The City will allow for convenient transportation options that accommodate people of all ages and physical abilities, including complete and safe sidewalks, public transit, and bicycle lanes.
- ▶ **Policy PHS-8.1:** The City will encourage access to grocery stores for all residents by allowing the development of such uses within walking or biking distance of all homes.
- ▶ **Policy CCD-1.13:** The City will maintain and enhance a strong pedestrian orientation in the Downtown Waterfront Specific Plan Area through the design of buildings, streets, and sidewalks.
- ▶ **Policy CCD-1.16:** Walls and landscape buffers are not encouraged between residential and nonresidential uses unless there is no feasible alternative through site planning and design to address noise, vibration, light, glare, air pollution, and or other demonstrated physical compatibility issues between adjacent land uses.
- ▶ **Policy CCD-2.1:** The City will support projects in existing developed areas to add and enhance pedestrian connections, public art, natural drainages, shade trees and other landscaping, and make other improvements to the public realm, as needed, to improve the quality of design in existing neighborhoods and business districts.
- ▶ **Policy CCD-2.3:** The City will support the construction of new pedestrian bridges, roadways, trails, as appropriate and as funding is available to increase connectivity between Downtown and other areas of Suisun City and between Suisun City and Fairfield. As new connections are created, they should add appropriate landscaping, drainage, and pedestrian and bicycle amenities.
- ▶ **Policy CCD-4.1:** New streets shall provide comfortable travel areas for pedestrians, bicyclists, and drivers to facilitate multi-modal travel for people of all ages.
- ▶ **Policy CCD-4.2:** New developments shall provide connecting streets with short blocks that create a pedestrian-scale environment.
- ▶ **Policy CCD-4.3:** New developments shall provide direct access routes to buildings from sidewalks and parking areas for pedestrians and bicyclists.
- ▶ **Policy CCD-4.9:** Benches, trash receptacles, drinking fountains, bus shelters, signage, and other improvements should be located along sidewalks and designed to enhance the visual environment and provide a welcoming place for pedestrians.
- ▶ **Policy CCD-4.10:** The City will work with Caltrans to install aesthetic and functional improvements along the SR 12 corridor, including landscaping, trees, pedestrian and bicycle pathways, separated from the travelway, and noise attenuation improvements.

- ▶ **Policy CCD-5.1:** The City will encourage – through entitlement streamlining, flexibility in development standards, fee structures, and other incentives – infill development of vacant or underutilized properties within Opportunity Areas.
- ▶ **Policy CCD-5.2:** The City will encourage creative design approaches, where necessary, to allow for mixed-use development within Opportunity Areas.
- ▶ **Policy CCD-7.3:** New commercial development shall provide secure locking of bicycles in locations that can be observed from inside proposed buildings.
- ▶ **Policy LU-1.1:** The City will encourage reinvestment in existing buildings and development of vacant and underutilized properties within existing neighborhoods.
- ▶ **Policy LU-1.3:** The City will guide land use change so that public gathering places, commercial services, recreational or other civic uses, and cultural destinations are within walking or biking distance, or accessible via public transit to as many Suisun City residents as feasible.
- ▶ **Policy LU-2.2:** The City will encourage business and personal services, government and other civic uses, professional offices, and high-density residential uses to locate within the Priority Development Area.
- ▶ **Policy LU-2.3:** The City will accommodate transit-oriented, mixed-use, residential and employment development within the City’s Priority Development Area between present and 2035.
- ▶ **Policy LU-3.1:** In the Northwest Downtown Opportunity Area, the City will promote transition of underutilized light industrial and service-oriented uses to entertainment, retail, higher-density residential, and professional office uses.
- ▶ **Policy LU-3.2:** In the Northeast Downtown Opportunity Area, the City will encourage development that is specifically designed with an orientation to the train station. This may include, but is not limited to higher-density residential uses and employment uses that would be accessed by rail commuters.
- ▶ **Policy LU-3.4:** In the South Sunset Avenue Area, the City will encourage additional retail, commercial service, professional office, and similar development that is oriented to, and accessible by nearby residential development.
- ▶ **Policy LU-3.5:** In the North Sunset Avenue Area, the City will facilitate higher-intensity retail, commercial service, and professional office development that is oriented to, and accessible by nearby residential development.
- ▶ **Policy LU-4.1:** The City will support the provision of facilities, services, or infrastructure only in areas that are planned for development. The City will not induce growth by supporting the provision of services or infrastructure in areas that are not planned for development under the General Plan.
- ▶ **Policy LU-4.2:** The City will only allow annexation of land that is on or adjacent to lands with available urban services.
- ▶ **Policy LU-4.5:** The City will create a fee structure and public investment strategy that provides incentives for compact development within the Downtown Waterfront Specific Plan Area, Opportunity Areas, and land within existing City limits.
- ▶ **Policy LU-4.6:** The City will maintain development and infrastructure standards that promote infill development and allow lot consolidation for redevelopment, where necessary.

- ▶ **Policy LU-4.7:** The City will support specific plans, redevelopment plans, corridor plans, and other small area plans that promote infill development and reinvestment.
- ▶ **Policy LU-4.8:** The City will use performance-based standards to address important aspects of land use compatibility (air, noise, vibration, heavy truck traffic, light, and glare) without impeding mixed-use infill development.
- ▶ **Policy T-1.6:** The City will design and operate streets and intersections to enable safe access for all users, including pedestrians, bicyclists, motorists, and transit riders of all ages and abilities.
- ▶ **Policy T-1.8:** The City will consult with other agencies, such as the Solano Transportation Authority, Solano County, Caltrans, and the Metropolitan Transportation Commission on assessing travel demand impacts to facilities managed by other agencies. The City will collaborate as a part of a coordinated regional program on collection of impact fees for regional transportation improvements.
- ▶ **Policy T-2.1:** The City will require and maintain an interconnected street network with short blocks to support pedestrian, bicycle, transit, automobile, and emergency access.
- ▶ **Policy T-2.2:** New streets shall be arranged in a grid or other highly connected pattern so that pedestrians, bicyclists, and drivers have multiple, direct routes to nearby destinations.
- ▶ **Policy T-2.3:** New developments shall be highly connected internally and connected with adjacent developed areas.
- ▶ **Policy T-2.4:** The City will support improvements that connect existing gaps in the transportation system, and that provide visual cues directing users onto through streets.
- ▶ **Policy T-2.5:** The City prefers direct connections that allow cars, bikes, and pedestrian through traffic over “doglegs” or “T” intersections.
- ▶ **Policy T-2.7:** The City will support improvements to regional connectivity, including connections to Fairfield, SR 12, Jepson Parkway, and I-80 that reduce trip lengths and provide redundant routes for emergency responders.
- ▶ **Policy T-2.8:** The City will use unified streetscapes and signage to create visual links for pedestrians, cyclists, and motorists and communicate routes that connect to the Downtown Waterfront Area.
- ▶ **Policy T-3.1:** The City will collaborate with other local, regional, and state agencies, as well as employers to encourage carpooling, carpool parking, flexible work schedules, ridesharing, and other strategies to reduce commute period travel demand.
- ▶ **Policy T-3.2:** The City will encourage new developments and public facility investments designed to minimize vehicle trips and vehicle miles traveled.
- ▶ **Policy T-3.3:** The City will support programs to provide education, information, facilities, and incentives to encourage City employees to walk, bike, or take transit to work, as funding is available.
- ▶ **Policy T-3.4:** The City’s analytical methods, review requirements, impact fees, and investments will be designed and implemented, in part, to reduce VMT by Suisun City residents and to local commercial and employment uses.
- ▶ **Policy T-3.5:** The City’s Traffic Impact Fee Program will be designed to provide incentives for new developments that are located and designed to reduce vehicular travel demand.

- ▶ **Policy T-3.6:** New developments that would accommodate 100 full- or part-time employees or more are required to incorporate feasible travel demand management strategies, such as contributions to transit/bike/pedestrian improvements; flextime and telecommuting; a carpool program; parking management, cash out, and pricing; or other measures, as appropriate, to reduce travel demand.
- ▶ **Policy T-6.1:** The City will facilitate construction and maintenance of an accessible, safe, pleasant, convenient, and integrated bicycle and pedestrian system that connects local destinations and surrounding communities. The City will support development of a safe and accessible trail network connected to the on-street bicycle and transportation system that provides transportation and recreational opportunities for Suisun City residents and employees.
- ▶ **Policy T-6.2:** The City will require design, construction, operation, and maintenance of “complete streets” that provide safe and convenient access and travel for pedestrians, bicyclists, motorists, and transit users of all ages and abilities.
- ▶ **Policy T-6.3:** The City will proactively coordinate with regional transportation and transit agencies to enhance the local transportation network in a way that encourages bicycling, walking, and transit use.
- ▶ **Policy T-6.4:** The City will collaborate with public transit agencies to provide a safe, efficient, comprehensive and integrated transit system. The City will prioritize improvements to the local bus system that connect with passenger train service.
- ▶ **Policy T-6.6:** Bicycle parking shall be provided near destination land uses, such as retail, commercial and public services, parks, schools, and transit stops.
- ▶ **Policy T-6.9:** The City will encourage construction of transit amenities, such as benches, information systems, shelters, and bike racks near transit stops.
- ▶ **Policy T-6.10:** The City will support improvements designed to encourage transit, such as traffic signal priority, bus queue jump lanes at intersections, exclusive transit lanes, and other techniques, as appropriate.
- ▶ **Policy T-6.12:** New building frontages shall be oriented to pedestrians. Primary pedestrian entries to nonresidential buildings should be from the sidewalk, not from parking areas.
- ▶ **Policy T-6.13:** New developments shall provide pathways that link to sidewalks, trails, streets, and adjacent transit stops.
- ▶ **Policy T-6.14:** Lockers and showers for cyclists shall be provided for new developments that would accommodate 100 or more full- or part-time employees.
- ▶ **Policy T-7.1:** Parking shall be located and designed to facilitate convenient pedestrian access to and from buildings, trails, sidewalks, and transit stops.
- ▶ **Policy T-7.4:** The City supports shared parking between multiple uses to the extent possible, and will provide incentives for property owners to share underused off-street parking.
- ▶ **Policy T-7.6:** The City will reduce parking requirements for mixed-use developments, for developments providing shared parking, for developments within ¼ mile of a bus stop or the train station, and for developments that incorporate travel demand measures.
- ▶ **Policy T-7.7:** Unless unusual circumstances warrant, the City discourages construction of new surface parking spaces in amounts greater than required by City standards.

- ▶ **Policy T-7.8:** New developments shall break up and distribute any proposed surface parking and shall provide adequate landscaping to achieve at least 50 percent shading of parking areas at maturity.
- ▶ **Policy T-7.9:** The City may waive or relax off-site parking requirements for infill and affordable housing projects that use shared parking, on-street parking, and techniques to reduce vehicular travel demand.
- ▶ **Policy T-7.10:** The City will establish parking maximums for new developments within the Downtown Waterfront Specific Plan Area and all areas within ½ mile walking distance from the train station.
- ▶ **Policy OSC-6.3:** Infill development in the Downtown Waterfront District shall be designed to preserve the overall pedestrian-scaled environment, including building configuration, setting, and orientation.
- ▶ **Policy-OSC-8.1:** The City will implement relevant policies from the Land Use and Transportation Elements that encourage connected transportation networks, provide for alternate modes of transportation, and encourage mixed-use and compact development patterns to reduce transportation energy use in Suisun City.

## Conclusion

The 2035 General Plan would add traffic to regional roadways in excess of Fairfield's LOS standards. The 2035 General Plan includes a broad range of policies and programs that will help to reduce travel demand, but the City cannot demonstrate at this time that these policies and programs would avoid changes to traffic level of service on Walters Road in Fairfield. This is considered a **significant cumulative** impact and the contribution of the 2035 General Plan is **cumulatively considerable**.

## Mitigation Measure

No feasible mitigation measures, beyond the 2035 General Plan policies and programs, highlighted above, are available. The impact is **significant and unavoidable**.

**IMPACT 3.14-2** **Roadway Traffic Capacity – Caltrans Routes.** *Implementing the 2035 General Plan would cause SR 12 between Beck Avenue and Walters Road to fall from LOS C or better (2010) to LOS D or worse in 2035. This impact is considered **cumulatively considerable**.*

Segments of SR 12 are projected to fall to LOS D, E, or F in 2035, which is below the Caltrans standard of the LOS C/D threshold. One segment, between Civic Center and Marina Boulevard, is already operating at LOS D based on current counts. The volume growth is generated by development in Suisun City, Fairfield, and the rest of the region, including Rio Vista and communities to the east. As noted in the methodology section, STA has plans to widen SR 12 to six lanes between I-80 and Pennsylvania Avenue, with new interchanges at Beck and Pennsylvania replacing the at-grade intersections, as part of the I-80/I-680/SR 12 Interchange Project. However, most of the work is projected to occur beyond the year 2035. The STA also envisions extending the six-lane widening further east to Walters Road, as recommended in the *SR 12 Comprehensive Evaluation and Corridor Management Plan, November 2012*, prepared by the STA in cooperation with Caltrans, MTC, and other affected councils of governments (COGs). However, funding has not been committed for the remaining widening. This is a **significant cumulative** impact. The 2035 General Plan would have a **cumulatively considerable** contribution.

## Relevant Policies of the 2035 General Plan

While SR 12 is a Caltrans-owned and operated facility, Suisun City participates in planning for operational and capacity improvements on the route, as a member agency of the Solano Transportation Authority. The following

General Plan policies and programs provide the basis for Suisun City's ongoing cooperation with the STA and Caltrans to minimize traffic growth on the corridor and plan for improvements to this corridor.

- **Policy T-1.8:** The City will consult with other agencies, such as the Solano Transportation Authority, Solano County, Caltrans, and the Metropolitan Transportation Commission on assessing travel demand impacts to facilities managed by other agencies. The City will collaborate as a part of a coordinated regional program on collection of impact fees for regional transportation improvements.
- **Policy T-3.1:** The City will collaborate with other local, regional, and state agencies, as well as employers to encourage carpooling, carpool parking, flexible work schedules, ridesharing, and other strategies

## Conclusion

The 2035 General Plan would add traffic to SR 12 between Beck Avenue and Walters Road. This is considered a **significant cumulative** impact and the contribution of the 2035 General Plan is **cumulatively considerable**.

## Mitigation Measure

No feasible mitigation measures, beyond the 2035 General Plan policies and programs, highlighted above, are available. The impact is **significant and unavoidable**.

**IMPACT 3.14-3**     **Roadway Traffic Capacity – CMP Routes.** *Implementing the 2035 General Plan would increase traffic volumes on CMP routes, including SR 12 and Walters Road. The traffic increases would not cause these CMP routes to exceed the CMP LOS standard. There is **no significant cumulative impact**.*

Certain segments of SR 12 are projected to fall to LOS D, E, or F, and Walters Road near Air Base Parkway (in Fairfield) is projected to reach LOS E. The CMP LOS standards for these routes are F (for SR 12) and E (for Walters Road). There is **no significant cumulative impact**.

## Relevant Policies of the 2035 General Plan

While SR 12 is a Caltrans-owned and operated facility, and Walters Road near Air Base Parkway is within Fairfield's jurisdiction, Suisun City participates in planning for operational and capacity improvements on the routes, as a member agency of the Solano Transportation Authority. Planned improvements for SR 12 are described in the methodology section and in the discussion under Impact 3.14-2, and improvements for the northern section of Walters Road are planned as part of the Jepson Parkway corridor improvements, by the STA and cooperation with Fairfield, Suisun City, Solano County and Vacaville.

The following General Plan policies and programs provide the basis for Suisun City's ongoing cooperation with the STA and these agencies, to minimize traffic growth on these corridors and plan for improvements to the corridors.

- **Policy T-1.8:** The City will consult with other agencies, such as the Solano Transportation Authority, Solano County, Caltrans, and the Metropolitan Transportation Commission on assessing travel demand impacts to facilities managed by other agencies. The City will collaborate as a part of a coordinated regional program on collection of impact fees for regional transportation improvements.

- **Policy T-3.1:** The City will collaborate with other local, regional, and state agencies, as well as employers to encourage carpooling, carpool parking, flexible work schedules, ridesharing, and other strategies Conclusion

## Conclusion

The CMP LOS standards for these routes are F (for SR 12) and E (for Walters Road). There is **no significant cumulative impact**.

### Mitigation Measure

No mitigation is required.

**IMPACT 3.14-4**     **Roadway Network Policy Consistency.** *The 2035 General Plan goals, objectives, policies, and programs with respect to roadway network planning, operations, and maintenance are internally consistent with the other Transportation Element policies and with the land use projections and policies in the Land Use Element. This impact is considered **less than significant**.*

The 2035 General Plan roadway network policies are designed to set performance standards for the roadway network that accommodate all modes of travel, and do not require maintenance of an auto level of service that would by definition make it difficult to achieve the desired performance of the bicycle, pedestrian, and transit networks in the city. In particular, Policy T-1.1 states that the City will condition development projects to maintain auto LOS E when feasible; and Program T-1.1 states that the City will develop and adopt a Multi-Modal Level of Service Standard, which will ensure the balancing of the needs of all travel modes as new development is processed.

In addition, the roadway network policies are consistent with the land use change assumptions developed by the City for the 2035 General Plan, as evidenced by the fact that Suisun City's local roadway network is projected to operate at LOS E (the 2035 General Plan's stated standard) with land use change at buildout of the 2035 General Plan. Finally, the Land use Element's policies regarding mixed-use development, transit-oriented development, and pedestrian-oriented form, are consistent with the Transportation Element's policies regarding multi-modal network and minimization of auto trip growth. For all of these reasons, this impact is considered **less than significant**.

### Mitigation Measure

No mitigation is required.

**IMPACT 3.14-5**     **Conflict with Adopted Policies, Plans, or Programs Regarding Public Transit, Bicycle, or Pedestrian Facilities.** *The 2035 General Plan is not projected to create conflicts with adopted policies, plans, or programs regarding public transit, bicycle or pedestrian facilities, or otherwise decrease the performance or safety of such facilities. There is **no impact**.*

The 2035 General Plan identifies clear priorities and procedures for balancing economic development objectives with environmental and social objectives, including the relationships between managing land use change and maintaining and enhancing multi-modal mobility and travel options.

The 2035 General Plan identifies bicycle and pedestrian networks appropriate to serve forecast development and the goals, objectives, policies, and programs related to bicycling, walking, and transit use support goals and plans of neighboring and affected jurisdictions, including STA, Fairfield, Solano County, Caltrans, and the Public Utilities Commission.

The 2035 General Plan bicycle and pedestrian network provides good connectivity – both internally and to neighboring Fairfield via the primary arterial connector roadways – Walters Road, Sunset Avenue, and Pennsylvania Avenue – as well as via the railroad overcrossing connecting the Suisun-Fairfield Train Station to Union Street in Fairfield. The 2035 General Plan, through Goal T-2, Objective T-2, Policies T-2.1 through 2.9 and Program T-2.1; and Goal T-6, Objective T-6, Policies T-6.1 through 6.16 and Programs T-6.1 – 6.4 all promote the development of better multi-modal connections and transportation choices for Suisun City residents, employees, and visitors.

The policies and programs include cooperative efforts with other jurisdictions, as stated in Program T-1 (collaborate with the City of Fairfield, Caltrans, the Public Utilities Commission, and Union Pacific Railroad to improve multi-modal access across SR 12 and the railroad); Policy T-6.4 (collaborate with public transit agencies to provide a safe, efficient, comprehensive and integrated transit system); Program T-6.3 (consult with Fairfield and Suisun Transit and seek to provide the most effective possible transit in Suisun City, with a focus on the integration between the FAST bus line and Capitol Corridor trains); and Program T-6.4 (collaborate with the Solano Transportation Authority, the Metropolitan Transportation Commission, the City of Fairfield, Solano County, and other agencies to seek grant funding for improvements with cross-jurisdictional benefits). There is **no impact**.

#### Mitigation Measure

No mitigation is required.

**IMPACT 3.14-6**     **Hazards Due to a Design Feature or Incompatible Uses.** *Implementing the 2035 General Plan would not substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses. This impact is considered **less than significant**.*

The 2035 General Plan Transportation Element contains policies and programs guiding the development and maintenance of the City’s roadway, bicycle, and pedestrian networks and all associated transportation infrastructure.

#### Relevant Policies of the 2035 General Plan

- ▶ **Policy T-1.6.** The City will design and operate streets and intersections to enable safe access for all users, including pedestrians, bicyclists, motorists, and transit riders of all ages and abilities.
- ▶ **Policy T-1.9.** The City will require new roads, intersections, and access points to be designed in accordance with City standards and avoid introducing any hazardous conditions.

All infrastructure projects designed and constructed under the direction of Suisun City will be subject to the design review and approval of the City Engineer, and will be required to conform to the City’s design standards and related requirements, which are designed to avoid such hazards. This impact is considered **less than significant**.

## Mitigation Measure

No mitigation is required.

**IMPACT 3.14-7**     **Emergency Access.** *Implementing the 2035 General Plan would not result in inadequate emergency access. This impact is considered **less than significant**.*

All Suisun City roadways will remain under the City's LOS E standard, indicating that congestion levels will not create unacceptable delays for emergency vehicles. Furthermore, the Transportation Element is designed to ensure that emergency access will be considered at all stages of the City's development and maintenance of the roadway network. These policies are listed below. Therefore, this impact is considered **less than significant**.

### Relevant Policies of the 2035 General Plan

- ▶ **Policy T-1.3:** The City's Level of Service policy will be implemented in consideration of the need for pedestrian and bicycle access, the need for emergency vehicle access, and policies designed to reduce vehicle miles traveled.
- ▶ **Policy T-2.2:** New streets shall be arranged in a grid or other highly connected pattern so that pedestrians, bicyclists, and drivers have multiple, direct routes to nearby destinations.
- ▶ **Policy T-2.3:** New developments shall be highly connected internally and connected with adjacent developed.
- ▶ **Policy T-2.4:** The City will support improvements that connect existing gaps in the transportation system, and that provide visual cues directing users onto through streets.
- ▶ **Policy T-2.5:** The City prefers direct connections that allow cars, bikes, and pedestrian through traffic over "doglegs" or "T" intersections.
- ▶ **Policy T-2.6:** In the instances where the City allows new cul-de-sacs, pedestrian, bicycle, and emergency through access is required, with lighting installed to ensure safety and security.
- ▶ **Policy T-2.7:** The City will support improvements to regional connectivity, including connections to Fairfield, SR 12, Jepson Parkway, and I-80 that reduce trip lengths and provide redundant routes for emergency responders.

### Conclusion

Congestion levels will not create unacceptable delays for emergency vehicles. The Transportation Element is designed to ensure that emergency access will be considered at all stages of the City's development and maintenance of the roadway network. The impact is considered **less than significant**.

## Mitigation Measure

No mitigation is required.

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# 3.15 VISUAL RESOURCES

## 3.15.1 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

### METHODOLOGY

This visual impact analysis is based on field observations and a review of maps and aerial photographs. Analysis of aesthetic impacts was based on evaluation of the changes to existing visual resources that would result from implementation of the 2035 General Plan. In making a determination of the extent and implications of the visual changes, consideration was given to specific changes in the visual composition, character, and valued qualities of the affected environment and the extent to which the affected environment contained places or features that have been designated in plans and policies for protection or special consideration. Although the “project” evaluated in this case is a comprehensive update of the City’s General Plan, the previous 1992 City General Plan was also used to identify priority visual resources in the Planning Area to support this analysis.

### THRESHOLDS OF SIGNIFICANCE

Based on Appendix G of the State CEQA Guidelines, the proposed project would result in a potentially significant impact on aesthetic resources if it would:

- ▶ have a substantial adverse effect on a scenic vista;
- ▶ substantially damage scenic resources, including but not limited to trees, rock outcroppings, and historic buildings within a state scenic highway;
- ▶ substantially degrade the existing visual character or quality of the site and its surroundings; or
- ▶ create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.

### Impact Analysis

**IMPACT 3.15-1**     **Adverse Impacts on Scenic Vistas and Visual Resources.** *Implementation of the 2035 General Plan could result in new urban development that would permanently alter and block some views of the Suisun Marsh, the Coastal Range, Cement Hill, the Potrero Hills, and the Vaca Mountains, which are defined by the City as locally important scenic vistas. This impact would be **potentially significant**.*

Implementation of the 2035 General Plan would involve land use change that could permanently alter and block some views of the Suisun Marsh, the Coastal Range, Cement Hill, the Potrero Hills, and the Vaca Mountains, which are important local scenic vistas. This impact is considered **potentially significant**.

### Relevant Policies and Programs of the 2035 General Plan

2035 General Plan policies are intended to preserve and enhance scenic views in Suisun City and increase visual access to the Suisun Marsh, the Coastal Range, Cement Hill, the Potrero Hills, and the Vaca Mountains. For example, the City will require new developments to be designed to retain or enhance views along existing public rights-of-way of locally important scenic resources, to the extent feasible. The City will review and, if necessary, condition new developments to frame views of locally important scenic resources, by providing direct lines of

sight along public rights-of-way and open space in areas where these features are prominently visible. Finally, 2035 General Plan policy establishes that the City will preserve and enhance visual connections to Suisun Marsh, including the development of environmentally-sensitive recreational facilities, as funding is available. Please refer to the 2035 General Plan and, in particular, the Community Character and Design Element for more details.

The City does not necessarily consider changes to the existing visual character through urban development to be an adverse change and new development can be designed with existing scenic views in mind. New development, depending on the design and location, could even increase public access to important aesthetic resources. Implementation of policies in the 2035 General Plan would preserve and enhance scenic views of the Suisun Marsh, the Coastal Range, Cement Hill, the Potrero Hills, and the Vaca Mountains, to the extent feasible. However, urban development anticipated under the 2035 General Plan could still alter and block some currently available public views of these scenic resources. There may be other considerations related to economic sustainability or other factors that the City will need to weigh in relation to policies intended to preserve and enhance local scenic vistas.

## Conclusion

Although the City has included, in the form of General Plan policy all feasible mitigation, is not possible at this time to conclude that no important local scenic vistas would be adversely effected by land use change that is accommodated under the 2035 General Plan. The impact would be **significant**.

## Mitigation Measure

No feasible mitigation is available that could fully preserve the existing views of the Suisun Marsh, the Coastal Range, Cement Hill, the Potrero Hills, and the Vaca Mountains while also accommodating future population and economic growth in the City under the 2035 General Plan. Therefore, this impact would remain **significant and unavoidable**.

**IMPACT**      **Damage to Scenic Resources within a State Scenic Highway.** *There are no officially designated scenic*  
3.15-2      *highways located within Suisun City or within Solano County. There would be **no impact**.*

There are no designated state scenic highways located within the Planning Area. State Route 37 in the extreme western portion of Solano County is eligible for the State Scenic Highway System, but has not been officially designated as a scenic highway. Therefore, there would be **no impact**.

## Mitigation Measure

No mitigation is required.

IMPACT  
3.15-3

*Degradation of the Existing Visual Character. Implementation of the 2035 General Plan would substantially alter the existing visual character of the Planning Area. The 2035 General Plan provides extensive policy direction to ensure that new development, redevelopment, and infill projects contribute in a positive way to the overall visual character of the community. The General Plan's design guidance will be largely implemented through parallel revisions to the City's Zoning Ordinance, but will also be implemented through the typical project and plan review process, wherein the City may condition new development, redevelopment, and infill projects to ensure that they are consistent with design policies of the General Plan. However, there are no feasible policies or programs that could maintain the existing visual character of the City, while also allowing the City to accommodate future needs for population and employment growth in the Planning Area. This impact would be **potentially significant**.*

The Downtown Waterfront Area, the Suisun City Historic District, the Suisun Marsh and other nearby waterways, the Coastal Range, Cement Hill, the Potrero Hills, and the Vaca Mountains define the city's aesthetic environment. The 2035 General Plan would accommodate reinvestment and infill development throughout the City, with an emphasis on development of vacant and underutilized properties. In addition, the 2035 General Plan would accommodate land use change in areas that are currently undeveloped. Although visual conditions in the Planning Area following implementation of the 2035 General Plan would be similar to existing views of urban settings found throughout Suisun City and in other communities along SR 12, implementation of the 2035 General Plan would alter the existing visual character of the City. Implementation of the 2035 General Plan would accommodate a geographic expansion of the developed area of Suisun City. This impact would be **potentially significant**.

### **Relevant Policies and Programs of the 2035 General Plan**

The City's 2035 General Plan policies implement the guiding principles identified in the Community Character and Design Element. These principles include preserving and restoring historic resources; developing the downtown as a pedestrian-scaled commercial and entertainment center that reflects the city's unique waterfront character; and maintaining complete, well-designed, and walkable neighborhoods, with active gathering places and nearby services. Furthermore, the 2035 General Plan policies guide the visual character of new development within the Planning Area and would reduce the effects of General Plan implementation related to visual character.

The City's design policies and standards ensure a unique sense of place in new developments so that the City's overall design character is improved between present and 2035. For example, the City will review and condition new developments, as necessary, to ensure that development is consistent with the desired future character of the City. This review will take into consideration the size, location, orientation, and height of buildings, as well as proposed signs, fences, drainage, walls, landscaping, and lighting. The City will require that parking areas are located and sized to reduce the visual dominance of parking as viewed from the front property line.

The City's policies establish that street frontages should be composed of building fronts and complementary landscaping, with parking located to the side or rear of the site. Residential developments in the City will incorporate porches, stoops, active rooms, and operable windows oriented to the street. Multi-family housing is encouraged to incorporate building forms and architectural features of adjacent single-family homes, as feasible. Retail developments are required to provide building façade treatments and activities that generate pedestrian interest and comfort, such as windows, canopies, arcades, plazas, and/or outdoor seating areas.

New developments in the Downtown Waterfront Specific Plan Area are required to incorporate design elements that are complementary with the historic character of this area. In the Downtown Waterfront Specific Plan Area and Priority Development Area, the City will encourage buildings that are located and sized in proportion with the width of adjacent streets to preserve the pedestrian-oriented scale of the area and promote the feeling of an “outdoor room” in the streetscape. The City will require that commercial signage is restrained in size and height. New developments will be required to provide attractive building façades and locate surface parking in a way that reduces the visual dominance in areas adjacent to, and visible from Key Community Gateways.

The City has identified Opportunity Areas northwest and northeast of the Downtown Waterfront Area, in the vicinity of the Downtown Marina, and south and north of Sunset Avenue. The City intends to improve the overall design character of each of the Opportunity Areas by encouraging creative design approaches, where necessary, to allow for mixed-use development and encouraging the reuse of buildings of historical or architectural value.

In addition, the City shall support projects in existing developed areas to add and enhance pedestrian connections, public art, natural drainages, shade trees and other landscaping, to improve the quality of design in existing neighborhoods and business districts. The City will also upgrade older developed areas with the planting of shade trees and landscaping along roadways and in surface parking areas, installation of decorative low walls and fences, street furniture, decorative lighting, and the screening of trash bins. Infill development in the Downtown Waterfront District will be designed so that building placement and massing, shape, design, color, and detail are architecturally compatible with surrounding historic buildings.

Please refer to the 2035 General Plan and, in particular, the Community Character and Design Element for more details. Please refer also to the Open Space and Conservation for design-related policies and programs for new developments in the City’s historic core.

## Conclusion

The policies of the 2035 General Plan are intended to ensure new development, redevelopment, and infill projects contributes in a positive way to the overall visual character of the community. An assessment of visual quality is a subjective matter, and individuals may consider changes in the visual character accommodated under the 2035 General Plan to be either positive or negative. There are no feasible policies or programs that could maintain the existing visual character, while also accommodating the City’s long-term population growth and economic development needs. This impact would be **significant**.

## Mitigation Measure

There is no feasible mitigation that would fully address aesthetic impacts associated with changes to the existing visual character. Although the 2035 General Plan includes policies and programs that would guide new developments so that they contribute positively to the local visual character, there is no mechanism to allow new developments, while also avoiding completely changes to the existing visual character. Therefore, this impact would remain **significant and unavoidable**.

**IMPACT 3.15-4**     **Increase in Nighttime Lighting and Daytime Glare.** *Implementation of the 2035 General Plan would accommodate land use change and new developments that will require security lighting and other types of lighting. This could inadvertently cause increased light and glare, potentially obscuring views of stars and other features of the nighttime sky. In addition, nighttime lighting or the presence of reflective surfaces on buildings may result in glare shining on residences and motorists traveling along SR 12, Petersen Road, and other roadways in day and nighttime conditions. Because land use change accommodated under the 2035 General Plan would introduce substantial new light sources, this is considered a **potentially significant** impact.*

Developed areas of Suisun City today generate substantial sources of light, glare, and light that trespasses into the night sky. The majority of new development under the 2035 General Plan would be located as an extension of existing urban core. However, the 2035 General Plan would accommodate land use change in areas that are currently undeveloped. The City anticipates that new lighting would be associated with retail, commercial, and industrial uses north of Petersen Road in the southeastern portion of the Planning Area and associated with retail uses in the western portion of the Planning Area south of SR 12 and east of Pennsylvania Avenue. New development could be located north of Petersen Road in an area that is adjacent to existing residences. In addition, the 2035 General Plan would accommodate substantial infill development in areas where there are existing sources of light and glare. Additional sources of nighttime light and glare could potentially obscure nighttime views of stars. Furthermore, urban development would create additional reflective surfaces, and cause additional glare, including glare affecting motorists traveling along SR 12, Petersen Road, and other local roadways during both night and day. Because land use change accommodated under the 2035 General Plan would introduce substantial new light sources, this is considered a **potentially significant** impact.

### **Relevant Policies and Programs of the 2035 General Plan**

The 2035 General Plan includes policies that would avoid light spillage and ensure that new developments do not create significant effects related to light or glare. For example, the City will review and condition new development, as necessary, to ensure that low, pedestrian-scaled, ornamental lighting is emphasized in order to avoid adverse effects on adjacent uses. New developments proposed within the City will be required to use attractive lighting that is complementary to the design of proposed structures. Light fixtures are required to aim light sources downward and provide shielding to prevent glare and reflection. The City will not allow permanent lighting that will blink, flash, or be of unusually high intensity or brightness. Lighting standards are required to avoid the use of harsh mercury vapor, low-pressure sodium, or fluorescent bulbs for lighting of public areas or for lighting within residential neighborhoods and the transition to LED streetlights would further reduce nighttime light and glare. In addition, the City will prohibit reflective surfaces that could cast glare toward pedestrians, bicyclists, or motorists. Bare metallic surfaces, such as pipes, vents, and light fixtures will be required to be painted to minimize reflectance. Sports lighting shall be located and designed to direct lighting to playfields and avoid light spillage outside of the property.

These policies are implemented through the City's typical process of reviewing and conditioning new developments, as necessary, to avoid the introduction of light and glare that would adversely affect motorists, bicyclists, and pedestrians using public travelways. New developments have several design options that can be used, as appropriate to avoiding substantial adverse light and glare effects, including: carefully planning the location and orientation of on-site lighting, use of non-reflective paint and building materials, use of vegetation

screening or shielding of light at the source, use of directional or lower-intensity lighting, use of timing devices or sound/motion-controlled lighting, or other techniques.

**Please refer to the 2035 General Plan and, in particular, the Community Character and Design Element for more details. Conclusion**

Land use change in the City's Planning Area would substantially increase the amount of nighttime light and glare, when compared to existing conditions. This could obscure views of stars and other features of the nighttime sky. Policies and programs of the 2035 General Plan would reduce or avoid impacts that could result from lighting sources in association with future projects proposed under the General Plan. However, nighttime lighting or the presence of reflective surfaces on buildings in commercial, retail, and light industrial areas (e.g., reflective window glazing) may result in light and glare shining on residences and motorists traveling along SR 12, Petersen Road, and other roadways in day and nighttime conditions. Because land use change accommodated under the 2035 General Plan would introduce substantial new light sources in the Planning Area, overall light and glare effects would be a **significant** impact.

**Mitigation Measure**

With implementation of policies in the 2035 General Plan, the potential light and glare impacts of future development projects would be minimized to the maximum extent feasible. Because no mitigation measures beyond the policies and programs of the 2035 General Plan are feasible that would fully preserve existing nighttime views, while at the same time allowing population growth and economic development within the City, this impact would remain **significant and unavoidable**.