



# Chapter 7

## Open Space and Conservation

### Introduction

This Element addresses state law requirements for an open space element and a conservation element. Suisun City combined open space and conservation issues in one element since the preservation of open space is closely related to the conservation of natural resources.

This Element describes the conservation, development, and use of natural resources and the lands on which these resources are located. This Element also addresses other open space uses of land, such as for recreation, in the context of their contribution to natural resource conservation. This Element contains management strategies for water, energy, biological and cultural resources, agriculture, and the City's policies for the preservation of open space lands that serve a variety of functions.

The goals, policies, and programs in this Element will be used by the City in its decision making on development projects, public investments in infrastructure, and renewable energy facilities, ecological restoration, and other actions related to open space and conservation.

Open spaces and the conservation of natural resources contribute to a high quality of life for current and future generations. There is a close relationship between the local quality of life and considerations related to public safety and the health of the environment. For this reason, there is considerable overlap between topics addressed in the different elements of the General Plan. For example, policies in the Land Use Element that promote more efficient use of land through compact development also allow the City to accommodate growth while reducing the use of water and energy, and without converting important open spaces to urban use unnecessarily.

There is overlap between this Element and the Public Health & Safety Element on issues of open space and conservation. For example, open space can be used to buffer sensitive uses from sources of air pollution and noise-generating land uses. Open space can be preserved to keep housing out of the floodplain and to filter pollutants out of stormwater. Open space can be used to protect low lying areas of the City from storm and tidal surges.

Conservation topics associated with cultural resources are also addressed in the Community Character & Design Element, specifically with regard to historic buildings in the Downtown Waterfront Area. Suisun City also derives much of its character from its proximity to Suisun Marsh, which is a unique natural environment that greatly contributes to local quality of life and well being. Historic buildings and the Suisun Marsh are just a couple examples of the important relationships between resources conservation and community character.



Exhibit 7-1

Suisun Marsh and Suisun City

## Related General Plan Guiding Principles

Prior to initiating work on the 2035 General Plan, the City Council directed staff to incorporate a set of Guiding Principles into the Update. Several of these Guiding Principles are relevant to this Element, including the following.



## Community Character

Suisun City will strive to enhance the City's authentic, local identity as a vibrant waterfront community.

- Preserve and restore historic resources and utilize design review to ensure compatibility with existing development.

## Destination Tourism and Entertainment

Suisun City will encourage the development of uses and protection of resources that attract visitors, enhancing the community as a tourism destination.

- Protect and enhance the Suisun Marsh as a natural scenic recreational resource.
- Provide a variety of high-quality passive and active recreation and leisure activities.

## Sustainability

Suisun City will practice economically, fiscally and environmentally responsible municipal decision-making to avoid shifting today's costs to future generations.

- Utilize sustainable development and land use practices that provide for today's residents and businesses while preserving choices for the community in the future.
- Encourage a healthy living environment.
- Preserve and enhance natural resources and minimize negative environmental impacts.

# Diagrams and Standards

## Open Space Diagram

Open space lands in Suisun City provide for outdoor recreation, resource management, habitat preservation and restoration, visual enjoyment, flood and hazard management, and watershed and water quality protection. Many of these areas can serve multiple functions. For example, open space areas that provide flood management also provide for visual enjoyment, habitat preservation, and recreation. Playgrounds can provide for school-related activities during the daytime and can also potentially accommodate community recreation when school is out.

The Open Space Diagram illustrates the City's intent for preserving important open spaces (Exhibit 7-3). Priority conservation and recreational areas are highlighted. The City will plan for, preserve, design, restore, and maintain open space in the Planning Area to achieve these open space functions. Plans and projects will be conditioned, if necessary, to protect these functions:

- recreation, particularly open-space-oriented recreational activities and amenities;
- resource management, habitat preservation and restoration, and mitigation lands;
- visual enjoyment, scenic views, and enhancement of community character;
- flood management;
- watershed and water quality protection; and
- avoiding development on lands subjected to hazards.

# Goals, Objectives, Policies, and Programs

Following are the City's goals, policies, and programs addressing open space and resource conservation.

## Biological Resources

### Habitat Areas

The majority of the land within the Suisun City limits is urbanized, although there are some undeveloped annual grasslands and wetland habitats. Most of the lands within the City provide low habitat values to most wildlife and generally do not support special-status plant species. Areas within the City with limited habitat potential include sections of Laurel and McCoy Creeks, which pass through the City to Suisun Marsh (see Exhibit 7-4).

The City is adjacent to Suisun Marsh, the largest contiguous estuarine marsh remaining on the west coast of the United States. Suisun Slough, adjacent to the Downtown Waterfront Area, provides access to the marina from Suisun Marsh and ultimately, the Pacific Ocean.

Natural habitat areas include vernal pool grasslands of statewide importance in the southern and southeastern portions of the Planning Area. The Jepson Prairie-Suisun Marsh corridor, a key wildlife movement corridor for the region, traverses the vernal pool grasslands in the southeast portion of the City's Planning Area (see Exhibit 7-5).



Exhibit 7-2

Open Space in Planning Area



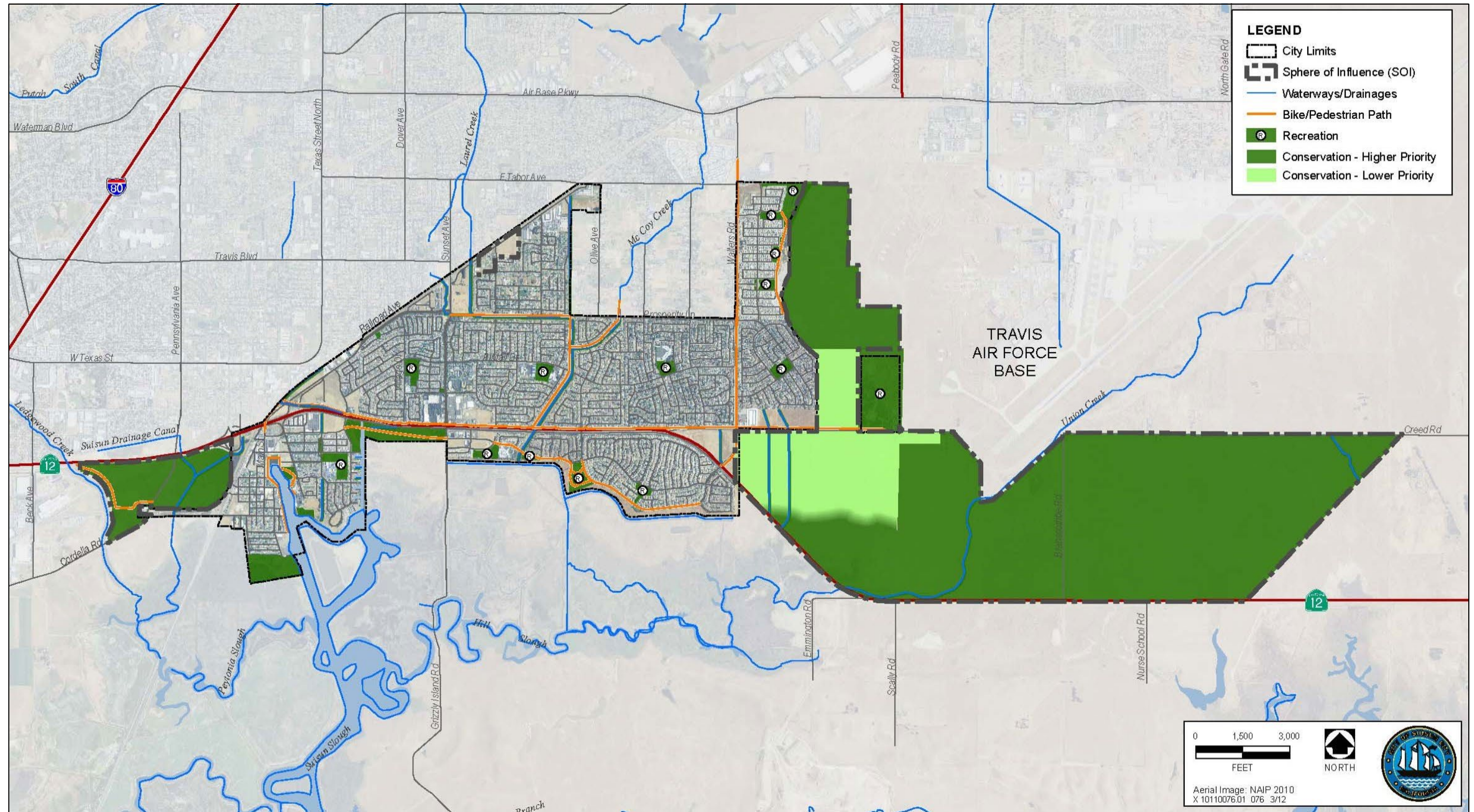
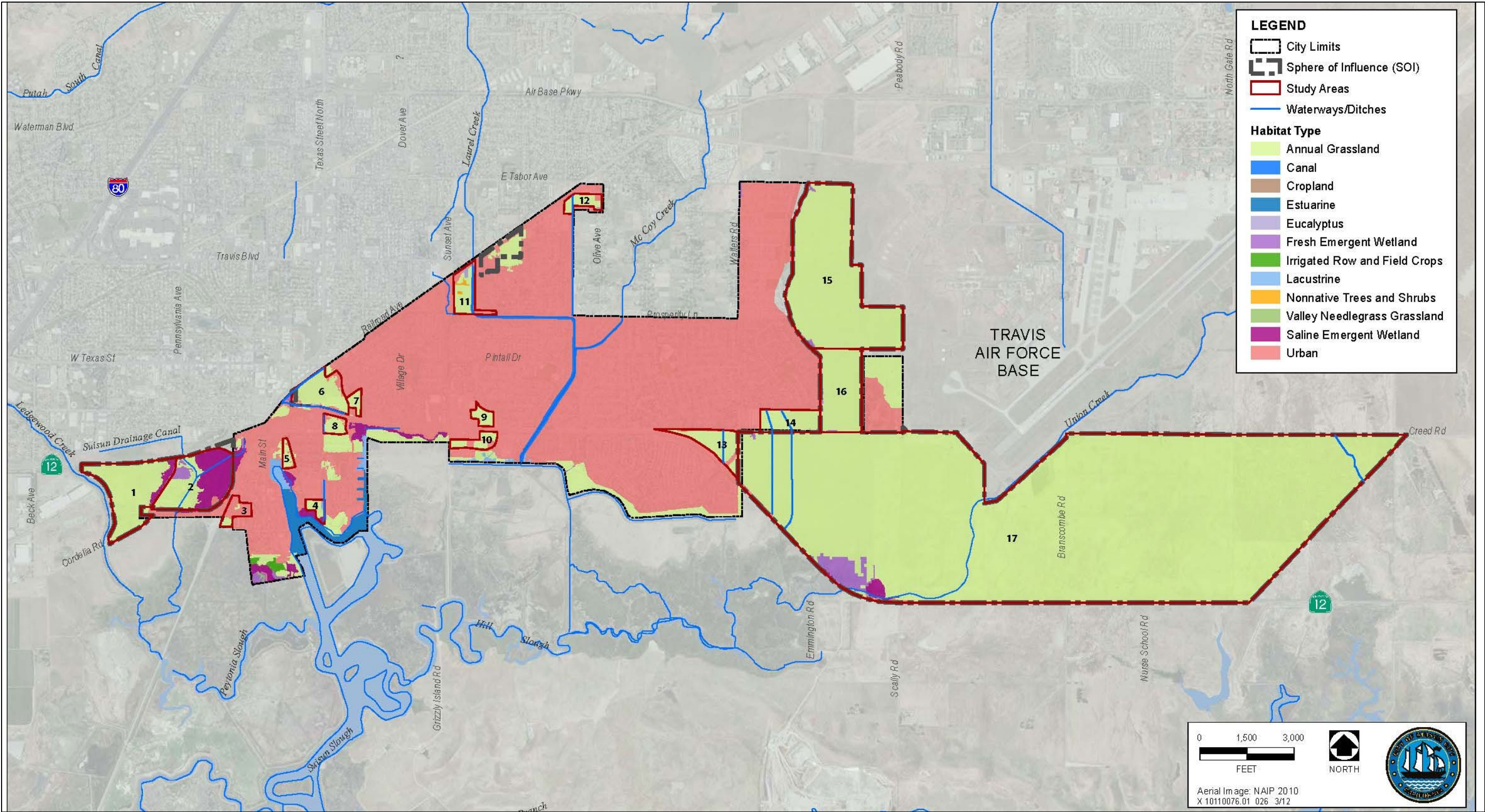


Exhibit 7-3

Open Space Diagram



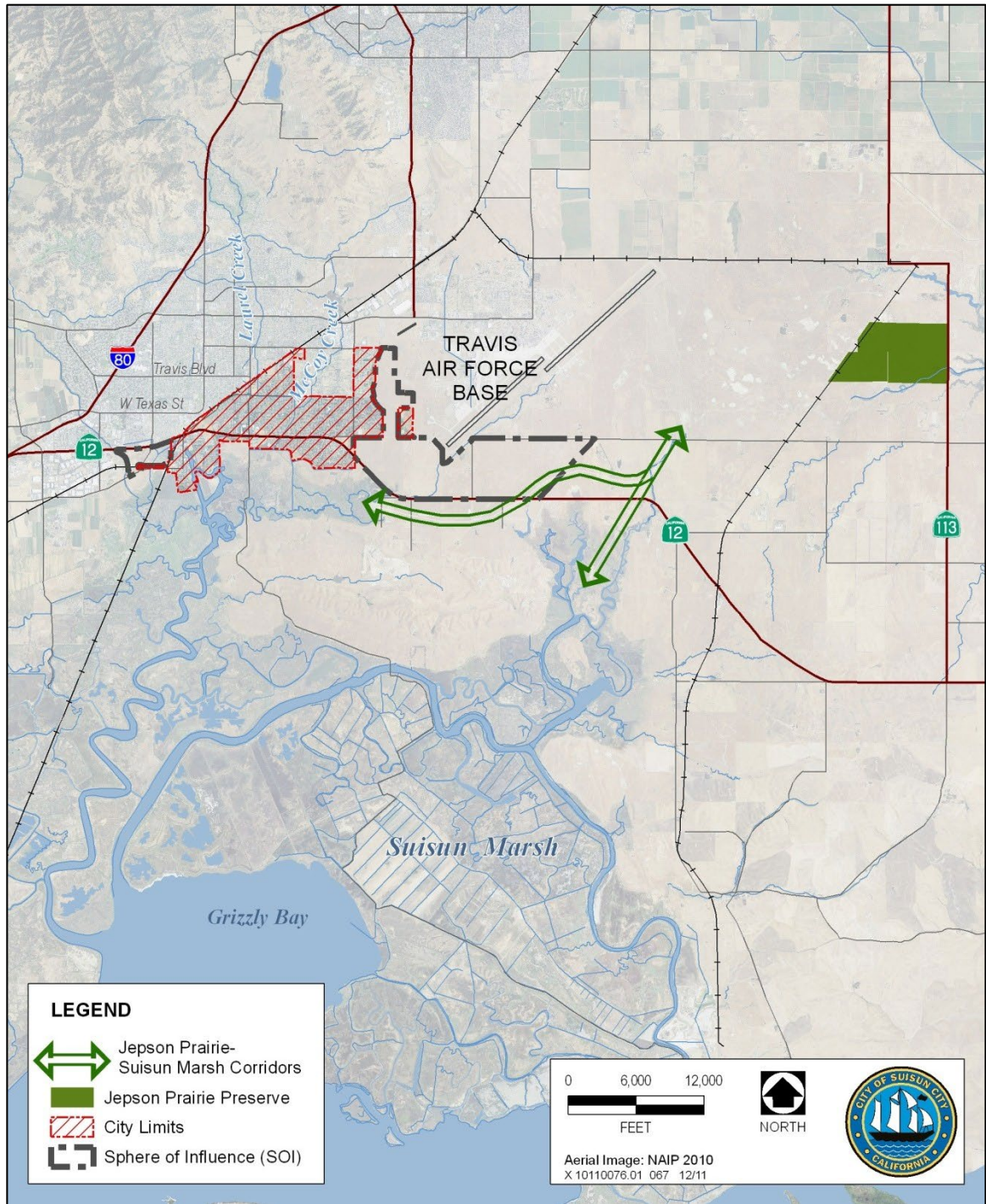


Source: USFS adapted by AECOM 2010 and 2012

Exhibit 7-4

Habitat Area Map





Source: Suisun City 2011, AECOM 2011, Solano County 2008

**Exhibit 7-5**

## Regional Natural Resources

The City is committed to preservation of the unique environment of the Suisun Marsh and has developed policies and programs specific to the Marsh, described below under the heading “Suisun Marsh.”

In addition to the areas described above, there may be other limited habitat areas, based on an examination of various data sources and independent field investigations conducted for the 2035 General Plan.<sup>1</sup> Potential habitat types include riparian habitat along streams, annual grassland habitat, seasonally saturated annual grasslands, freshwater emergent wetland, vernal pools, degraded seasonal wetlands, Valley needlegrass grassland, and alkali seasonal wetland. Most of these areas are located in the eastern and southeastern portions of the Planning Area near Travis Air Force Base, as well as a few vacant or underutilized lots and sites along waterways.

## Special-Status Species

Habitats present in the Planning Area have the potential to support 27 special-status plant species. Four of these species are federally endangered and one is federally threatened. Three species are state listed as endangered.

Habitat in the Planning Area has the potential to support 19 special-status wildlife species. Three of these species are federally listed as threatened and four as federally endangered. Four species are state listed as threatened, three are state listed as endangered, and nine are state species of special concern.

## Solano Multispecies Habitat Conservation Plan

A habitat conservation plan (HCP) for portions of Solano County is being prepared by Solano County Water Agency (SCWA), with 11 other participants (six cities, including Suisun City, and five special districts).

This area-wide approach to conservation can be a more effective means to protect areas that have a higher likelihood of conserving special-status species over the long term. Conservation planning can accelerate the permitting process, reduce permitting costs, improve regulatory certainty for resource agencies, and facilitate public infrastructure projects. The program provides economic incentives for willing private landowners to conserve and act as stewards of valuable resources, and enables local governments to play a leadership role in natural resource conservation and permitting within a framework established in partnership with regulatory agencies. The Solano Multispecies HCP is intended to accommodate economic and community development; retain the economic vitality of the local agricultural community; maintain recreation, hunting, fishing, and other public uses of the local open space; simplify and expedite land use and conservation planning in the county; protect threatened and endangered species; and preserve plant and wildlife communities in Solano County.

The City’s goals, policies, and programs related to habitat are presented in the material that follows.

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<sup>1</sup> See Chapter 2, “Biological Resources,” of the *City of Suisun City General Plan Update Background Report* for additional information regarding habitat areas in and surrounding Suisun City.






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## Goal OSC-1 Protect wildlife habitat and movement corridors through the preservation of open space

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**Objective OSC-1** Increase the number of new developments that preserve and integrate drainages and other wildlife movement into site plans.

- 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. Wildlife movement corridors include marshlands, waterways, and other types of corridors that provide for movement and dispersal.*
- Policy OSC-1.2 New developments in areas with waterways, riparian habitats, and stands of mature trees shall preserve and incorporate those features into project site planning and design, to the greatest extent feasible.*
- Policy OSC-1.3 New developments shall be designed to protect and preserve natural watercourses and drainage channels 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.*
- 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 New developments shall be designed to preserve fish and wildlife habitats along Suisun Slough and tributary watercourses to the maximum 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 practical 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.*

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### Program OSC-1.1 Preservation through Site Planning and Design

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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.

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**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.

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**Program OSC-1.3 Biological Resources 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).

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#### **Program OSC-1.4    Habi tat 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.

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#### **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.

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#### **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.

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## **Goal OSC-2 Ensure consistency with Solano Multispecies Habitat Conservation Plan**

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### **Objective OSG2 New development in the Planning Area supports the conservation objectives of the Solano Multispecies HCP**

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|-----------------------|--|
| <i>Policy OSC-2.1</i> | <i>The City will coordinate environmental review and mitigation requirements with the Solano Multispecies HCP.</i>   |
| <i>Policy OSC-2.2</i> | <i>The City will support the use of mitigation fees from the Solano Multispecies HCP to fund preservation and restoration elements of the City's conservation and open space strategy.</i>     |
| <i>Policy OSC-2.3</i> | <i>The City will require that new developments comply with relevant conservation measures detailed within the Conservation Strategy chapter of the Solano Multispecies HCP, as applicable.</i> |

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### **Program OSC-2.1 Conservation Planning**

The City, in collaboration with other participating agencies, will participate in development, adoption, and implementation of the Solano Multispecies HCP. Mitigation and conservation measures from the HCP will be incorporated into the City's monitoring and implementation of the General Plan, as appropriate.

## **Suisun Marsh**

The Suisun Marsh is a fragile ecological community of 84,000 acres, with approximately 50,000 acres of floodable land and 32,000 acres of sloughs and estuaries. These areas include unique and fragile tidal marsh lands, which support special-status species, recreational opportunities, and commerce. Suisun City has depended on the major sloughs in Suisun Marsh for commerce and industry, and has developed around it. While only a small fraction of the marsh lies within the Planning Area, land use change in the Planning Area has the potential to directly and indirectly affect the marsh.

The wetlands of Suisun Marsh are enormously productive, in terms of plant and animal life, and provide a foundation of natural life for much of the large ecosystem of which Suisun Marsh is a part. The Marsh is a haven for large populations of migratory birds. It





provides basic nutrients in support of the life cycles of many varieties of plants and animals, including species important to commercial fisheries and endangered species. The Marsh is a living laboratory for scientific study, while also providing outdoor recreation opportunities for hunting, fishing, boating, and other activities.

Suisun Marsh is an important asset for the City's commerce, recreational opportunities, and surrounding environment. Through cooperative programs involving the Suisun Resource Conservation District, landowners, hunting clubs, and county, regional, state, and federal agencies, a high level of protection of the Marsh is already provided. Despite ongoing conservation efforts, the environment of Suisun Marsh is threatened more by activities outside the Marsh than within it, including the effects of erosion and sedimentation outside the Marsh boundary. There are various efforts to protect Suisun Marsh due to its significance as an important ecological area and its location adjacent to the Sacramento-San Joaquin Delta, a larger area of great ecological and commercial importance. Conservation efforts include the Suisun Marsh Protection Plan, Bay-Delta Conservation Plan, and the Delta Plan.



Exhibit 7-6

Suisun Marsh

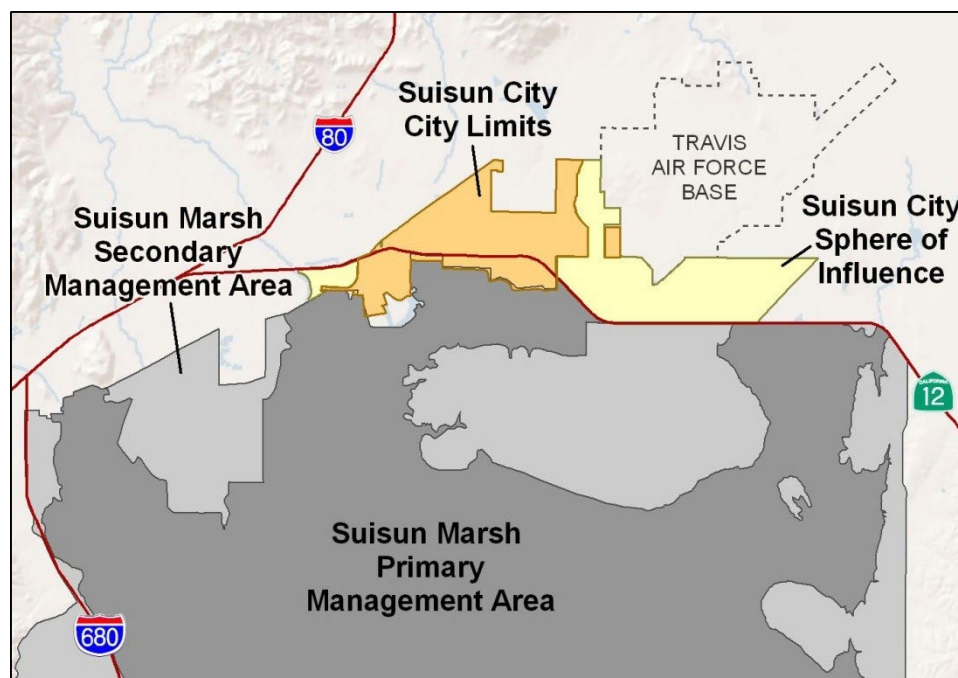
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## Goal OSC-3 Protect and improve the qualities and amenities of the Suisun Marsh as a natural habitat

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**Objective OSC-2 Enhance and not detract from the habitat values provided in the Suisun Marsh.**

*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.*

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## **Goal OSC-4    Improve recreational access for residents and visitors into Suisun Marsh**

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**Objective OSC4** Balance an increase in recreational access to Suisun Marsh with protection of habitat value.

- Policy OSC-4.1**      *The City will promote access to, and recreation within the Suisun Marsh area provided such access and recreation is compatible with the marsh environment.*



*Access for disabled residents and visitors will be provided to the greatest extent feasible.*

*Policy OSC-4.2 The City will require that access into the Suisun Marsh is in conformance with relevant Marsh Protection Plan policies for utilities, public facilities, and transportation.*

*Policy OSC-4.3 The City will consider the feasibility of planning for parklands bordering the Suisun Marsh that allow for park uses to view natural Marsh habitat and enhance the recreational value of the Marsh.*

*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.*

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#### **Program OSC 4.1 Educational Program to Promote Awareness**

The City will collaborate with other public agencies and/or nonprofit organizations to establish an education program designed to promote awareness of the Suisun Marsh and share with residents and visitors the unique qualities of the Marsh and encourage stewardship. The City will seek funding opportunities to establish interpretive signage features and an education facility. Funding could come from mitigation fees, grants, and other sources, as they become available.

## **Cultural and Paleontological Resources**

### **Prehistoric Resources**

Although evidence from the earliest dates is sparse, humans have occupied the Central Valley region of California since the late Pleistocene and early Holocene periods (8,000 to 12,000 years ago). However, by the time that European settlers arrived in central Solano County, Native American populations had been decimated by disease. At the time of European contact in the 18th century, this area was occupied by the Patwin tribe of California Native Americans. As indicated in studies prepared by the Central Solano County Cultural Heritage Commission, there are no known archaeologically sensitive sites within the City, although archaeologically sensitive areas do lie outside of the City south of the Downtown Waterfront Area.

### **Historic Resources**

Development between the 1880s and the 1930s gave Suisun City much of its historic character. Substantial changes also occurred in the 1940s, as new residential and commercial development occurred as a result of the construction of what became Travis Air Force Base. Additional development occurred in the 1970s and 1980s as the City underwent redevelopment. The Downtown area retained its historic character. There are many well-preserved residences and commercial buildings. Notable examples include the Suisun-Fairfield Train Depot, the Masonic Lodge, and the First Church of Christ Scientist.





**Exhibit 7-7**                      **Historic Home in the Suisun City Historic District**

The State Office of Historic Preservation has concurred that the Suisun City Historic District is eligible for listing on the National Register of Historic Places. The Historic District (Exhibit 7-9) is comprised of 95 contributing buildings and 34 non-contributing buildings. The boundary includes residences, commercial, and social/religious buildings that have historically been associated with the Downtown core of Suisun City and retain their integrity. The District reflects distinctive examples of late 19<sup>th</sup> and early 20<sup>th</sup> Century architecture. Although the majority of contributing buildings are not individually eligible for their architecture because they lack distinction, when viewed as a collection, these buildings contribute to the district's historic character.

The Downtown Waterfront Area has experienced major redevelopment, but standards in the Downtown Waterfront Specific Plan are intended to retain the historic authenticity of existing buildings and ensure that new developments are compatible with the historic character.

The City has a tremendous opportunity during buildout of this General Plan to better connect historic preservation efforts and the City's economic development strategy, particularly tourism.



This view is to the north along Main Street toward the courthouse in Fairfield and was taken between 1915 and 1920.

**Exhibit 7-8**

**Historic Downtown Suisun City**

## **Paleontological Resources**

Suisun City is underlain largely by alluvial deposits, which can contain paleontological resources. The geological units beneath the City include Late Holocene alluvium (11,000 years old to Present Day), Pleistocene alluvium (1.8 million to 11,000 years old), and the Tehama Formation (5.3 to 1.8 million years old) (Exhibit 7-10). Holocene alluvial deposits may contain vertebrate and invertebrate fossils, but since deposits are 11,000 years old or less, these fossils are generally not considered to be paleontologically significant.

Vertebrate fossils found in Late Pleistocene Alluvium include, but are not limited to, bison, mammoth, ground sloths, saber-toothed cats, dire wolves, cave bears, rodents, birds, reptiles and amphibians. These deposits are considered highly sensitive for paleontological resources. The Tehama Formation contains series of fluvial deposits, which are known to contain vertebrate fossils from numerous locations in the Central Valley and therefore has a high paleontological sensitivity.

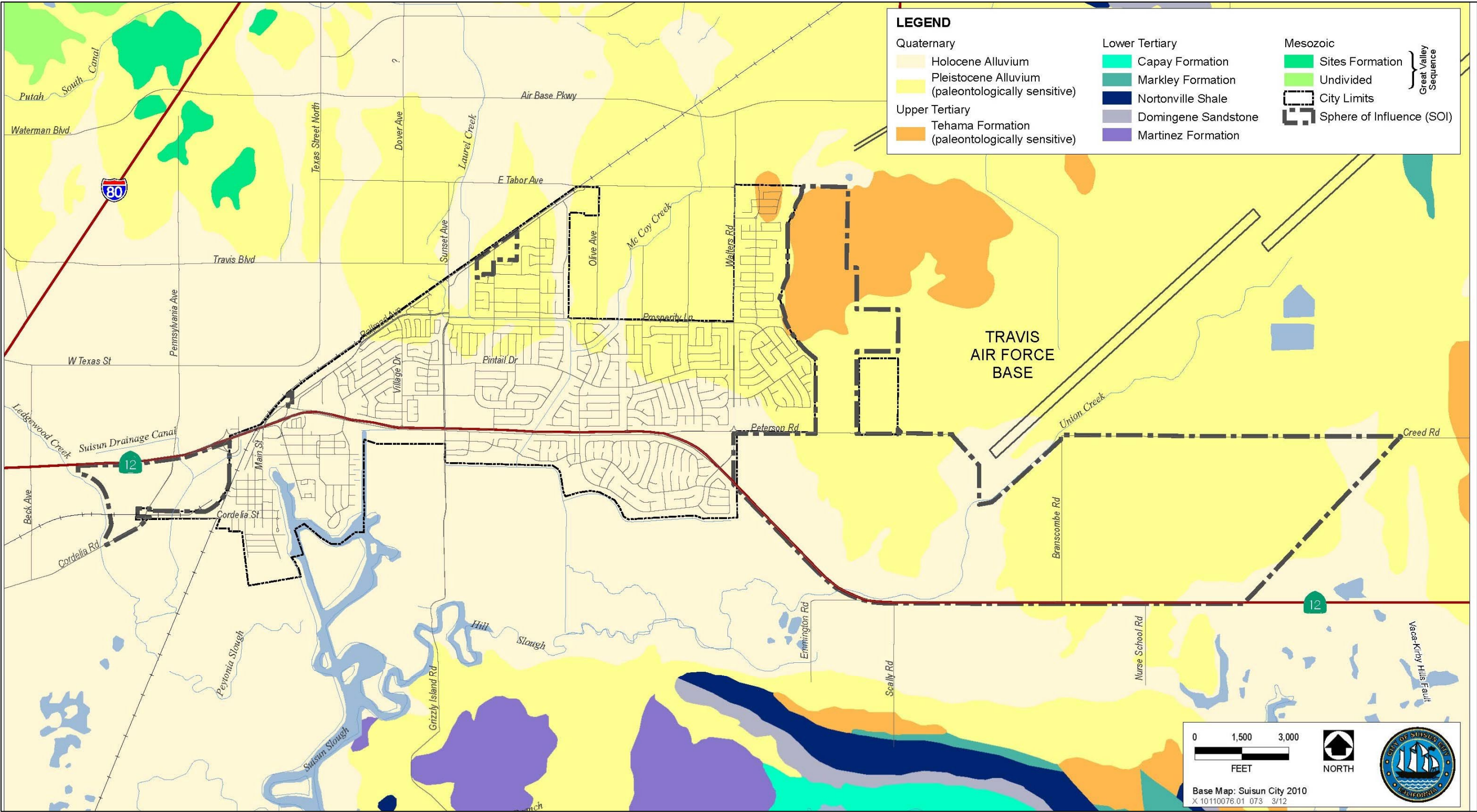


Source: AECOM 2011

Exhibit 7-9

Downtown Waterfront Historic District





Source: USGS 1997

Exhibit 7-10

Paleontologically Sensitive Rock Formations






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## Goal OSC-5 Minimize Negative Impacts on Prehistoric Resources

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**Objective OSC-5: Review and condition new developments to minimize prehistoric resource impacts.**

- Policy OSC-5.1 The City will use geologic mapping and cultural and paleontological resource databases to determine the likely presence of resources and the appropriate level of cultural and paleontological 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.*
- Policy OSC-5.3 New developments in areas underlain by Pleistocene Alluvium and the Tehama Formation shall include training, notification, and recovery procedures for fossils.*

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### 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.

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### 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.
- For new developments that would alter historic structures (structures 50 years old or older), a qualified architectural historian shall conduct a record search and assess the potential for the project to result in significant impacts to historic resources that occur as part of the existing built environment.
- 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.

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## Goal OSC-6 Preserve and Enhance Suisun City's Historic Downtown

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**Objective OSG6: Balance the economic development and heritage resource benefits of development within Suisun City's Historic Downtown.**

*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 rehabilitation of historic structures.*

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#### **Program OSC-6.1      Hi storic 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.

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#### **Program OSC-6.2      Documentation of Hi storic 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.

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#### **Program OSC-6.3      Hi storic Rehabili tation 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.

# Water Supply

Suisun City and Solano Irrigation District (SID) formed a Joint Exercise of Powers Agreement in 1976 to provide a long-term water supply for the City. In 1990, the City and SID strengthened their partnership by becoming a full Joint Powers Authority, the Suisun-Solano Water Authority (SSWA). Currently, SSWA has two sources of water: the United States Bureau of Reclamation (USBR) Federal Solano Project and the California Department of Water Resources (DWR) State Water Project. SSWA obtains most of its water supply from Lake Berryessa, which is owned and operated by the USBR. However, the City cannot directly access or use its Solano Project entitlement, due to lack of connection infrastructure from the SSWA treatment facility, although the City can transfer and exchange this entitlement for other water supplies with other water users in Solano County. Groundwater in the area is largely brackish, and is therefore unsuitable for use without extensive treatment, which is prohibitively expensive.

The Urban Water Management Planning Act requires that water agencies prepare urban water management plans (UWMPs) to support their long-term water resource planning and ensure that water supplies are available to meet the agency's existing and future water demands. The most recent UWMP prepared by the Suisun-Solano Water Authority, a joint powers authority between Suisun City and SID, which provides domestic water supplies to Suisun City, was prepared in 2011.

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## Goal OSC-7 Ensure an Adequate and Efficient Long-Term Water Supply

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### Objective OSC-7 Assess long-term water supply and incorporate water conservation measures within Suisun City

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|-----------------------|---|
| <i>Policy OSC-7.1</i> | <i>The City will participate in ongoing water supply planning with Solano County Water Agency, Solano Irrigation District, and other local jurisdictions.</i>   |
| <i>Policy OSC-7.2</i> | <i>The City will 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).</i>   |
| <i>Policy OSC-7.3</i> | <i>The City will condition approval of new developments on the availability of sufficient water supply, storage, and fire flow (water pressure), per City standards.</i>  |
| <i>Policy OSC-7.4</i> | <i>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.</i> |
| <i>Policy OSC-7.5</i> | <i>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.</i>                               |
| <i>Policy OSC-7.6</i> | <i>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.</i>                                 |





- 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 developments shall incorporate climate-appropriate landscaping to reduce water demand and ongoing maintenance costs.*

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### **Program OSC 7.1      Urban Water Management Plan**

The City will participate, as a part of the Solano Water Authority (SSWA), in updates to the Urban Water Management Plan, which shall identify and quantify adequate water supplies for existing and future demands and ensure the efficient use of urban water supplies.

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### **Program OSC 7.2      Study to Extend Connection to Solano Project**

The City will initiate a study with the Suisun-Solano Water Authority and the Solano County Water Agency to determine the feasibility of extending a connection from the Suisun-Solano Water Authority water treatment facility to Suisun City so that the City may directly utilize its Solano Project water entitlement.

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### **Program OSC 7.3      Climate-Appropriate Landscaping**

The City will seek funding to replace landscaping and irrigation systems on City properties and rights-of-way that have a high water demand and high maintenance costs (for mowing, etc.) with more climate-appropriate and low-maintenance landscaping and irrigation systems.

## **Energy**

Transportation is, by far, the largest energy consuming sector in California, accounting for 40 to 54% of all energy use in the state.<sup>2,3</sup> Community design that provides for efficient travel options (short trips, walking, bicycling, public transit) can improve overall housing affordability. According to the 2008 Bureau of Labor Statistics' Consumer Expenditure Survey, housing in the U.S. West accounts for 35% of overall spending, and transportation is the second highest spending category, accounting for 16% of household expenses. There is a close relationship between transportation energy costs and community affordability.

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 & Design Elements of this 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 depot;

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<sup>2</sup> U. S. Energy Information Administration. Energy Profiles. Available online: <http://tonto.eia.doe.gov/state/>. Accessed February 24, 2010.

<sup>3</sup> Lawrence Berkeley National Laboratory. Development of Energy Balances for the State of California. June 2005

- High-quality pedestrian and bicycle connections between destinations;
- Development patterns and transportation infrastructure that together provide citizens and businesses with more energy efficient travel choices;
- A bicycle and pedestrian network that connects neighborhoods and commercial centers to each other and to other destinations around town; and,
- Encouraging infill and redevelopment as an overall strategy to place homes and destinations closer to one another.

Please refer to the Land Use, Transportation, and Community Character & Design Elements of the General Plan for more information on energy-conserving policies related to land use, transportation, and community design.

In addition to transportation, other energy consumption sectors include heating, cooling, and powering of buildings, and powering industry and other uses. Industrial use is the next highest energy consuming sector, accounting for 23% of energy use, followed by commercial use accounting for 19% and residential use, accounting for 18% of energy use in California.

Just as with household transportation costs, household energy costs can be reduced through energy conservation techniques. Utilities and public services associated with housing accounts for 6% of overall consumer spending. Businesses and civic uses in Suisun City also devote substantial portions of their budgets to energy for heating, cooling, and operations, which can be reduced through site planning, building orientation, landscaping, building materials, lighting and mechanical systems design, and renewable energy systems.

## Site and Building Design

Site and building design elements, such as building orientation, tree planting, and other site planning techniques can increase energy efficiency. Some of these techniques that increase energy efficiency include, but are not limited to:

- Orientation of buildings so that narrower sides of buildings face the hot western sun;
- Placement of trees or shade structures to the south and southwest of buildings; and
- Water conservation, water conserving landscaping, and stormwater management systems that reduce water use (and therefore the electricity needed to convey water).

In addition to site planning, other strategies for energy conservation relate to the selection of building materials, construction methods, appliances, and other building components. Energy efficiency measures incorporated into building design provide both residents and businesses ongoing cost-saving opportunities. Energy efficiency retrofits could substantially improve the energy efficiency of existing buildings. Well-designed, smaller residential units (with smaller spaces to heat and cool) can also reduce energy demand.

Title 24 of the California Code of Regulations contains California's building standards for energy efficiency. The standards are updated periodically to consider and incorporate new energy efficiency technologies and methods.



## Renewable Energy

Production and purchasing of renewable energy is another effective way that the City can reduce energy demand (and provide local cost savings). Recent advances in technology provide the City with a variety of feasible options for renewable energy production. Use of solar power for hot water and electricity is common. Wind power is being developed throughout the state, and fuels created in part or entirely from vegetative material are becoming more and more common.

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### Goal OSC-8 Improve energy efficiency, encourage renewable energy generation and use, and reduce ongoing household and business energy costs

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#### Objective OSC-8 Exceed statewide energy efficiency gains in Suisun City between present and 2035

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|-----------------------|---|
| <i>Policy-OSC-8.1</i> | <i>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.</i>  |
| <i>Policy OSC-8.2</i> | <i>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.</i> |
| <i>Policy OSC-8.3</i> | <i>The City will encourage landscaping methods, materials, and designs that promote energy conservation.</i>  |
| <i>Policy OSC-8.4</i> | <i>The City will preserve existing trees and plant new trees along streetscapes to provide shade.</i>   |
| <i>Policy OSC-8.5</i> | <i>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.</i>   |
| <i>Policy OSC-8.6</i> | <i>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.</i>   |
| <i>Policy OSC-8.7</i> | <i>The City will seek regional, state, and federal funding for energy efficiency improvements in existing buildings and the public realm.</i>   |
| <i>Policy OSC-8.8</i> | <i>The City will encourage the installation and use of active solar systems to reduce electricity use from the grid.</i>  |
| <i>Policy OSC-8.9</i> | <i>The City will conduct energy efficiency audits of all City-owned buildings to identify efficiency improvements.</i>  |

- 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.*
- Policy OSC-8.11      The City will explore the viability of LED streetlights to reduce energy consumption and provide more reliable and constant illumination.*
- 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.*

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### **Program OSC-8.1      Seek Funding Sources for Alternative Energy Retrofits**

The City will participate in available financing programs for property owners that encourage energy efficiency improvements, including those that are paid back through a line item on property taxes, as feasible. The City will explore possible funding opportunities, including low-interest financing, grants, and other programs and funding mechanisms that could be used for energy efficiency retrofits and alternative energy projects in existing residential, commercial, civic, and industrial buildings. The City will identify methods to 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, as well as installation of renewable energy facilities. The City will provide information on available programs to residents and business owners.

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### **Program OSC-8.2      Renewable Energy Systems**

The City will provide guidance in the Municipal Code for small and large-scale renewable energy generation facilities. The Code will be structured to encourage and facilitate development of these facilities. New facilities shall be constructed and maintained in compliance with any relevant state and federal regulations, as appropriate.

## **Agriculture**

Agriculture accounts for a major portion of overall economic activity in Solano County and agricultural uses are present on more than 60% of the County's total land area.<sup>4</sup> Agriculture directly contributes to the local economy through job development, production, and exports. Agricultural production is also closely linked to many other industries. For every 100 jobs in agriculture, it is estimated that another 94 additional jobs are created in related industries.<sup>5</sup>

"Prime Farmland" has the best combination of physical and chemical features able to sustain long-term agricultural production. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date to be considered Prime Farmland. "Farmland of Statewide Importance" is similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date to be considered Farmland of Statewide Importance. Some soil associations in the City's

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<sup>4</sup> House Agricultural Consultants. 2007 (November 19<sup>th</sup>). Solano General Plan Background Report for Agriculture.

<sup>5</sup> University of California Agricultural Issues Center. 2006 (November 29<sup>th</sup>). The Measure of California Agriculture.





Planning Area are suitable for agriculture, although there is no Prime Farmland or Farmland of Statewide Importance in the Planning Area, since these lands have not recently been used for irrigated agricultural production.

The Williamson Act established an incentive program for preserving agricultural lands, wherein property owners are taxed at a lower rate in return for a guarantee that these properties will remain under agricultural production. As of the writing of the 2035 General Plan, there are lands under Williamson Act contracts located within the southeastern portion of the Planning Area. These lands are generally located north and south of Peterson Road, east of Walters Road, and north and northeast of SR 12. Williamson Act contracts renew automatically, unless one of the parties serves a written notice of nonrenewal on the other party. The nonrenewal process is the most common mechanism for termination of Williamson Act contract lands. Development of Williamson Act lands prior to contract expiration generally requires cancellation of the contracts.

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## Goal OSC-9 Manage growth in a way that is supportive of continued viable agricultural practices

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**Objective OSC-9: The City will plan in a way that preserves important agricultural land and supports the ongoing operation of agriculture and agriculture-related activities**

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|-----------------------|---|
| <i>Policy OSC-9.1</i> | <i>New developments in areas adjacent to ongoing agricultural operations shall be planned and designed to avoid introducing any compatibility issue that would reasonably be expected to pressure to prematurely convert farmland to a non-agricultural use.</i>                            |
| <i>Policy OSC-9.2</i> | <i>New developments adjacent to ongoing agricultural operations shall provide written notice to landowners and residents regarding potential noise, dust, odors, and other effects of adjacent agriculture.</i>   |
| <i>Policy OSC-9.3</i> | <i>New developments adjacent to ongoing agriculture shall incorporate design, construction, and maintenance techniques to minimize conflicts with adjacent agricultural uses, including conflicts related to odors.</i>   |
| <i>Policy OSC-9.2</i> | <i>The City will focus on efforts to attract uses that are related to, and supportive of the local agricultural economy.</i>  |
| <i>Policy OSC-9.3</i> | <i>New developments will not require compensatory mitigation for the loss of grazing land or for conflicts with County agricultural zoning, provided the subject project or plan is consistent with the General Plan and City pre-zoning and zoning.</i>                                    |
| <i>Policy OSC-9.4</i> | <i>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.</i> |
| <i>Policy OSC-9.5</i> | <i>The City will support and promote the Williamson Act exchange program as an alternative to payment of cancellation fees.</i>   |

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**Program OSC-9.1 Support Regional Agricultural Preservation Program**

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.

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**Program OSC-9.2 Williamson Act Easement Exchange Program**

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.

# Chapter 8

## Community Facilities and Services

### **Introduction**

This Element of the General Plan identifies existing City of Suisun City services and facilities; recreational services and facilities; education-related services and facilities; and utility services and facilities. In addition, it addresses future public facilities and service needs, identifies performance standards and other means to ensure that desired service levels are maintained throughout the build-out process, and plans for the provision of future capital facilities. While not required by State law for inclusion in the General Plan, this Element serves as an important component in planning for the future infrastructure and public services needs of the community. Additional information related to the topics included in this Element is found in the General Plan Background Report (Volume II of the General Plan).

A primary tool for implementing this Element is the City's Capital Improvement Program (CIP). The CIP identifies needed infrastructure and facilities, as well as potential funding sources, and is updated more frequently than the General Plan. This Element provides the policy guidance for CIP priorities and standards.

## Related General Plan Guiding Principles

Prior to initiating work on the 2035 General Plan, the City Council directed staff to incorporate a set of Guiding Principles into the Update. Following are select Guiding Principles from this list that are relevant to the Community Facilities and Services Element.

### Destination Tourism and Entertainment

Suisun City will encourage the development of uses and protection of resources that attract visitors, enhancing the community as a tourism destination.

- Protect and enhance the Suisun Marsh as a natural scenic recreational resource.
- Provide a variety of high-quality passive and active recreation and leisure activities.

### Infrastructure

Suisun City will provide quality community services and sound infrastructure.

- Deliver public facilities and services in a timely and cost-effective manner.
- Ensure availability of water and sewer services to accommodate the City's continued growth and prosperity.
- Plan for the design and cost of future infrastructure to serve the community as it grows.

### Public Safety and Emergency Preparedness

Suisun City will strive to protect the community and minimize vulnerability to disasters.

- Foster neighborhood safety through sensitive community planning practices, fire safety measures, building codes/seismic requirements, and effective code enforcement.
- Protect life and property through reliable law enforcement and fire protection, as well as active, sensitive service to members of the community in need.
- Minimize the City's vulnerability to natural and man-made disasters and strengthen the City's emergency response systems.

### Quality of Community Life

Suisun City will foster an inclusive, multigenerational community that is economically and ethnically diverse.

- Foster volunteerism and encourage and recognize our service, non-profit, and faith-based organizations and their impact on the community.
- Encourage our community to live, work, and play locally, while supporting social and cultural activities, facilities and programs.
- Provide a full-spectrum of activities and services to meet the needs of the entire community, including youth and seniors.





# Goals, Objectives, Policies, and Programs

## Overall Goal and Policies

This Element is organized topically according to the type of community facility or service. The City has also developed an overarching goal and policies for providing community facilities and services that apply to various types of facilities and services.

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**Goal CFS-1**    **Provide facilities and services to new and existing residents and businesses at levels that maintain or improve the local quality of life and fiscal sustainability of the community.**

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**Objective CFS-1**    **Plan, prioritize, program, and fund community facilities and services to accommodate development anticipated at buildout of the 2035 General Plan.**

*Policy CFS-1.1*    *New developments will be required to demonstrate, to the satisfaction of the City Engineer, that existing services and utilities can accommodate the increased demand generated by the subject project or that project conditions would adequately mitigate for impacts associated with addition demand.*

*Policy CFS-1.2*    *The City will proactively communicate with service agencies to identify mutually beneficial joint-use and co-location opportunities for existing and new facilities.*

*Policy CFS-1.3*    *The City will maintain development impact fees at a sufficient level to finance infrastructure costs.*

*Policy CFS-1.4*    *The City will explore alternative revenue sources to expand and maintain municipal services and facilities and supplemental funding mechanisms, including but not limited to storm drainage districts and road tax, to help fund maintenance of City infrastructure.*

*Policy CFS-1.5*    *New utilities shall be installed concurrent with construction of roadways, wherever feasible, and constructed underground, except where allowed aboveground by the Municipal Code.*

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**Program CFS-1.1**    **Master Plans and Capital Improvement Program**

The City will collaborate with Suisun-Solano Water Authority (SSWA), Solano Irrigation District (SID) and Fairfield-Suisun Sewer District (FSSD) to maintain and implement water, sewer, and stormwater master plans and the City's Capital Improvement Program.

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**Program CFS-1.2 Nexus Study and Development Impact Fee Update**

The City will collaborate with Suisun-Solano Water Authority (SSWA), Solano Irrigation District (SID) and Fairfield-Suisun Sewer District (FSSD) to maintain updated nexus fee studies and impact fees.

## Public Safety

The Suisun City Fire Department provides fire protection services within incorporated areas of the City. Today, the Department staffs one fire station, Station 47, located at 621 Pintail Drive. The Suisun City Fire Department is mostly volunteer, although there is one paid Fire Chief and two paid Captains.

The Suisun City Police Department has one station at 701 Civic Center Boulevard, adjacent to City Hall. The Constable Anson Burdick Center, located at 1101 Charleston Street, serves as a substation for the eastern portion of the City. Police services include: preventing and controlling conduct threatening to life and property; aiding individuals who are in danger of physical harm; protecting constitutional guarantees; facilitating the movement of people and vehicles; assisting those who cannot care for themselves; resolving conflict; identifying potential problems in the community; and creating a feeling of security in the community.

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**Goal CFS-2 Maintain public safety facilities and services for new and existing residents and businesses that protect the public health, safety, and welfare.**


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**Objective CFS-2 Provide staffing levels, facilities, and community design required to maintain acceptable emergency response times and effective public safety services.**

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| <i>Policy CFS-2.1</i> | <i>The City will strive to achieve an emergency response time of five minutes or less.</i>  |
| <i>Policy CFS-2.2</i> | <i>New developments will be required to design, and the City will maintain streets that facilitate acceptable emergency access and response times.</i>  |
| <i>Policy CFS-2.3</i> | <i>New developments shall be designed, constructed, and equipped consistent with requirements of the California Fire Code to reduce fire risk.</i>  |
| <i>Policy CFS-2.4</i> | <i>The City will promote and support community-based crime prevention programs as an important augmentation to the provision of professional police services.</i>   |
| <i>Policy CFS-2.5</i> | <i>The Police Department should review development proposals and provide recommendations that would ensure adequate access and community surveillance.</i>  |
| <i>Policy CFS-2.6</i> | <i>The Fire Department should review development proposals and provide recommendations that would ensure adequate emergency access, fire suppression equipment, and other features that reduce fire risk.</i> |

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**Program CFS-2.1 Fire Stations**

The City will consider sites and seek funding for the construction of two fire stations that would serve existing and new development accommodated under the 2035 General Plan. It is anticipated that



these two fire stations will replace the existing station and that there may be co-location opportunities for other services and/or facilities.

## Parks, Trails, and Water-Oriented Recreational Facilities

The City maintains parks of different sizes, which are distributed throughout the community. The City has a total of 95.7 acres of active parkland, including 47.7 acres of neighborhood parkland in 10 individual parks and 48.0 acres of community parkland in 2 parks. This is a ratio of approximately 3.4 acres for every 1,000 residents, which exceeds the National Recreation Association standard of 2.5 acres per 1,000 residents.

Community parks are designed to serve the needs of several neighborhoods or the whole community and can range up to 500 acres in land area. Community parks provide a variety of facilities and serve a relatively larger area than neighborhood parks. Lambrecht Sports Complex, in the eastern portion of the Planning Area, hosts City and other community events (Exhibit 8-1). This complex has 4 Little League baseball fields and 4 softball fields. Heritage Park, located adjacent to the Joseph Nelson Community Center, offers a lighted ball diamond, picnic tables, playground, basketball court, and a jogging trail.



**Exhibit 8-1**

**Lambrecht Sports Complex**

Neighborhood parks include play areas and facilities suitable for informal play, practices, or scrimmages, as well as picnic areas, gathering areas, and other passive recreational facilities. Neighborhood parks can range up to 15 acres in land area and are located and designed to serve residents walking or bicycling from the surrounding neighborhoods. Neighborhood parks have a combination of turf area, benches, barbecues, playgrounds, ball fields, basketball courts, and other similar facilities.

In contrast to community and neighborhood parks, "mini parks" or "pocket parks" are smaller in size and typically provide passive recreational opportunities. The City has smaller parks and plazas that provide small active spaces and passive areas for



gathering and recreating, such as the 1-acre McCoy Creek Park, the 1-acre Harbor Park, and the 1.1-acre Waterfront Plaza.

The City of Suisun City Recreation Department maintains pedestrian and bicycle trails for recreational use by residents and visitors. There are various multi-use trails within Suisun City. The Central County Bicycle Trail is a 17-acre, 4.36-mile multi-modal pathway located along Jepson Parkway and then along State Route (SR) 12 to the Downtown Waterfront Area. McCoy Creek Trail is a multi-modal pathway planned to connect the Central County Bicycle Trail with neighborhoods to the north (to Blossom Avenue and possibly Sunset Avenue). Phase I of the Trail has been constructed and is located along the western side of McCoy Creek from SR 12 to Pintail Drive. Once completed, the Trail would be 0.77 miles in length. Petersen Ranch Trail is a 6.2-acre, 0.62-mile pathway oriented north-to-south along the eastern portion of the City limits.

Please see Exhibit 4-5 in the Transportation Element for a description of the City's existing and planned bicycle and pedestrian facilities.

Completely rebuilt in 1994, the Suisun City Marina provides 150 rental berthing slips along with a 300-foot guest dock and boat launch ramps (Exhibit 8-2). The Suisun Marina area from the fishing dock to the turnaround basin is dredged to allow deep-water access for most recreational boats. The Harbor Master building was constructed at 800 Kellogg Street (Exhibit 8-3).



**Exhibit 8-2**

**Suisun City Marina**

The Suisun Channel provides direct access to the waterways of the Delta and San Francisco Bay. The slough winds through the Suisun Marsh, one of the largest contiguous brackish wetland preserves in the nation. The Suisun Marsh lures nature-lovers, fishermen, hunters, and all categories of boaters. The Suisun Channel and Marsh boasts outstanding sturgeon and striped bass fishing; excellent sightseeing and bird-watching; and fabulous waters for pleasure boating, cruising, water skiing, jet skiing, kayaking, and other water-related activities.



Exhibit 8-3

Harbor Master Building

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**Goal CFS-3    Meet the active and passive recreational needs of Suisun City residents and visitors.**

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**Objective CFS-3    Provide sufficient and well-designed parks, trails, and water-oriented recreational facilities.**

- Policy CFS-3.1            The City will ensure provision of community, neighborhood, and smaller parks and plazas at a ratio of at least 3 acres per 1,000 residents.*
- Policy CFS-3.2            New developments shall dedicate and/or contribute on a fair-share basis toward improved, publicly accessible parkland, according to City park standards.*
- Policy CFS-3.3            The City will continue maintenance and enhancement of shared facilities with Fairfield-Suisun Unified School District and seek to collaborate with other agencies to provide additional high-quality and cost-effective park, recreation, and trail facilities.*
- Policy CFS-3.4            The City will collaborate with relevant advocacy groups to provide additional recreational facilities that meet the needs of residents with different developmental and physical abilities.*
- Policy CFS-3.5            The City should seek to maintain, expand, and enhance multi-use trails, with a focus on designs that serve multiple purposes, such as habitat conservation and restoration, stormwater conveyance and water quality maintenance, buffering, and other purposes.*
- Policy CFS-3.6            The City will support the establishment and expansion of private recreational facilities to meet existing and future recreational and leisure needs and facilitate local tourism.*

- Policy CFS-3.7      The City will support development and enhancement of environmentally sound recreational opportunities to experience the Suisun Marsh and Slough.*
- Policy CFS-3.8      The City will continue to develop and enhance the recreational benefits associated with the Suisun Channel, including unimpeded access to the Downtown Waterfront Area by boaters from elsewhere in the region.*
- Policy CFS-3.9      The City will seek to capitalize on opportunities in new development, reinvestment projects, and public infrastructure projects to develop and/or restore multi-benefit corridors that can connect pedestrians and cyclists with local destinations, provide a buffer between the railroad or high-volume roadways and noise-sensitive uses, conserve water and other resources, improve aesthetics, convey and filter stormwater runoff, accommodate community gardens, and provide other useful public purposes.*
- Policy CFS-3.10     Recreational facilities should be designed to minimize surface runoff, maximize the use of climate-appropriate and low-maintenance landscaping, provide habitat for native species, and incorporate universal access principles to facilitate use by people of all ages and abilities.*

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**Program CFS-3.1      Suisun Channel**

The City will seek funding to identify short- and long-term strategies for dredging and disposal, improvements to levees, opportunities for additional access and boating facilities, and related improvements and maintenance required to allow proper flow for traffic and water. These strategies would be accompanied by cost estimates, a funding strategy, measures to protect sensitive environmental resources, and appropriate roles and responsibilities for implementation.

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**Program CFS-3.2      Parks and Recreational Facilities**

The City will revise the Zoning Ordinance, Downtown Waterfront Specific Plan, and other relevant regulatory documents to comply with the 2035 General Plan for the provision and funding of parks and recreational facilities. The City will seek funding to monitor the use of existing recreational facilities and participation in recreational programs, identify local preferences and priorities for future recreational facilities and programs, and implement appropriate improvements to existing facilities and development of new facilities to accommodate demand generated under the 2035 General Plan. The City may pursue these actions through a Parks and Recreation Master Plan or through other means.





# Community Facilities

Community facilities are provided throughout the City to accommodate a variety of needs, activities, and populations. The City of Suisun City Recreation Department manages the Joseph A. Nelson Community Center, which is located in Heritage Park, provides a location for children and adult classes, community meetings, special events and rentals (Exhibit 8-4).



**Exhibit 8-4**

**Joseph A. Nelson Community Center**

The Harbor Theatre Building is located on the Historic Waterfront of Downtown Suisun City at 720 Main Street. The building features a lobby, full concessions bar, and reception hall along with the 170-seat main theatre and two rehearsal spaces. These can also be rented for smaller events.

The Casa de Suisun senior living establishment, located at 322 Merganser Drive, offers opportunities for independent and assisted living for adults with studios, and one and two bedroom suites. This establishment is directly adjacent to the Suisun City Senior Center, located at 318 Merganser Drive, providing easy access to the facility. The senior center has an office, kitchen, multi-purpose room, and activity rooms for classes, recreation, social services, and other activities.

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**Goal CFS4**    **Address the needs of City residents and visitors to meet needs for activities, promote health, encourage lifelong learning, and facilitate local tourism.**

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**Objective CFS4**    **Encourage participation in activities and cultural events that promote community health, lifelong learning, and local tourism.**

*Policy CFS-4.1*    *The City will partner with other organizations to expand pre-school and class options to meet the needs of the City's working parents with safe, convenient, and nurturing child care.*

*Policy CFS-4.2*    *The City will encourage a variety of safe and positive environments for youth activities through partnerships with a variety of providers, including but not limited*

*to faith-based organizations, the Kroc Center, the Solano County Library, and the Police Teen Academy and Suisun City Alcohol, Tobacco, and Other Drugs Prevention Coalition.*

*Policy CFS-4.3      The City will maintain and seek funding to enhance the Senior Center to provide a range of activities and services to support seniors in the community.*

*Policy CFS-4.4      The City will maintain and seek funding to expand cultural and educational facilities and services to serve local needs and to encourage visitors to the City.*

*Policy CFS-4.5      The City will encourage a variety of cultural and educational facilities in the community, such as the Suisun Wildlife Center, the Lawler House gallery, the Harbor Theater; facilities to accommodate environmental tourism and education, arts and crafts centers, interpretive outlets for natural and human history, and space for temporary events, including outdoor events; and a local volunteer base to assist in the establishment and operation of such facilities and events.*



**Exhibit 8-5**

**Suisun City Waterfront**

## **Educational Facilities and Services**

Suisun City elementary, middle school, and high school students are served by the Fairfield-Suisun Unified School District (FSUSD). FSUSD includes the following elementary schools serving Suisun City residents: Crescent Elementary, located at 1001 Anderson Drive; Dan O'Root Elementary School, located at 820 Harrier Drive; Suisun Elementary School, located at 725 Golden Eye Way; and Tolenas Elementary School, located at 4500 Tolenas Road. FSUSD includes Crystal Middle School, located at 400 Whispering Bay Lane; and Grange Middle School, located at 1975 Blossom Avenue. Suisun City high school students either go to Armijo High School, located at 824



Washington Street in Fairfield or to Fairfield High, located at 205 East Atlantic Avenue in Fairfield (FSUSD Demographic Study 2009-2010).

Solano Community College is a public community college that serves the Suisun City area. The College offers a variety of programs and services, with many students advancing onto four-year colleges.

The Suisun City Library, a branch of the Solano County Library system, is located at 601 Pintail Drive (Exhibit 8-6).<sup>1</sup> This is 10,000 square-foot facility on a 1.3 acre parcel of land constructed in 2008. The Library embodies an innovative use of public space. Built adjacent to Suisun Elementary School, it serves as both a public and school library. The library features a study room, community meeting room, and a 15-seat computer center. The meeting room hosts library programs and serves as an “in-library” classroom by day and community meeting room at night. Students can enter the children’s section of the library directly from the school through a secure entrance reserved for their use during the school day.



Exhibit 8-6

Suisun City Library

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## Goal CFS-5 Encourage a well-educated workforce through the provision of quality schools and libraries

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**Objective CFS-5** Collaborate with the Fairfield-Suisun School District, Solano County Library, Solano Community College, Solano Transportation Authority’s Safe Routes to School Program and other partners to enhance educational opportunities for Suisun City residents.

*Policy CFS-5.1 The City will support the School District in providing high-quality educational facilities during General Plan buildout.*

*Policy CFS-5.2 The City will help to promote Safe Routes to School and other programs that encourage walking and bicycling to schools and will assist in identifying funding that can be used for improvements to enhance pedestrian and bicycle safety and convenience around schools.*

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<sup>1</sup> Solano County Library. 2009 (April). Solano County Library Facilities Master Plan. Update.

- Policy CFS-5.3      The City will coordinate with the School District in the development review process to ensure the opportunity to evaluate the impact of new development to public schools.*
- Policy CFS-5.4      The City will proactively communicate with the School District and Solano County Office of Education to identify joint-use arrangements that accommodate both public education and community activities and strategies for mutual cost savings through shared maintenance responsibilities.*
- Policy CFS-5.5      The City will identify mutually beneficial projects and activities with Solano Community College that expand educational, arts and culture, job training, and environmental sustainability programs in the community.*
- Policy CFS-5.6      The City will consider partnership opportunities with the Solano Library to expand local library resources and services*
- Policy CFS-5.6      The City will encourage private donations and State funding to support local library operations.*

## Utilities and Service Systems

### Water

The City provides domestic water and sewer services for all properties located within its boundaries. Domestic water is provided through the Suisun-Solano Water Authority, a joint powers authority between the City of Suisun City and the Solano Irrigation District. The City handles the local billing and requests for water and sewer service; the Irrigation District delivers the water to the meter of each property. The Water Authority board, which consists of the City Council and the Solano Irrigation District board, provides policy direction for SSWA (Suisun City). Suisun City and Solano Irrigation District (SID) formed a Joint Exercise of Powers Agreement in 1976 to provide a long-term water supply for the City. In 1990, the partnership became a full Joint Powers Authority named the Suisun-Solano Water Authority (SSWA), resulting in reconstruction and modernization of the old Suisun Water System.

Currently, SSWA has two sources of water, the United States Bureau of Reclamation (USBR) Federal Solano Project and the California Department of Water Resources (DWR) State Water Project. SSWA obtains most of its water supply from Lake Berryessa, which is owned and operated by the USBR. Lake Berryessa water is diverted through the Putah South Canal to the Cement Hill Water Treatment Plant (Urban Water Management Plan). Both Suisun City and Solano Irrigation District (SID) have contracts with Solano County Water Agency (SCWA) for water supplies from the Federal Solano Project. Due to a lack of connection to the SSWA water treatment plant, Suisun City is unable to directly utilize this water entitlement. However, the City can transfer or exchange this entitlement with other Solano County water users with access to the North Bay Aqueduct during periods of water shortage. This would include cities of Benicia, Fairfield, Vacaville, and Vallejo. SID, through an Implementation Agreement with SSWA, delivers from its Solano Project entitlement the additional water needed to provide treated water service to the SSWA service area.<sup>2</sup>

<sup>2</sup> Suisun Solano Water Authority. 2011 (May 13<sup>th</sup>). Urban Water Management Plan.





The Cement Hill Water Treatment Plants have a total design capacity of the 10 million gallons per day (mgd). The treatment processes for these plants includes: coagulation, sedimentation, filtration, and chlorination.

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.

These facilities would provide a peaking storage of 20% and an emergency storage of approximately one full anticipated maximum day demand, and will also provide fire storage of 420,000 gallons.

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## **Goal CFS-6    Provide an adequate supply of clean and safe water to meet anticipated demand.**

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### **Objective CFS-6    Ensure ongoing maintenance and improvements to the water system and adequate supply to meet the needs of existing and new development.**

- |                       |  |
|-----------------------|--|
| <i>Policy CFS-6.1</i> | <i>New developments will be required to demonstrate the availability of adequate water supply and infrastructure, including during multiple dry years and adequate fire flow pressure, prior to approval.</i>                                |
| <i>Policy CFS-6-2</i> | <i>As part of the Suisun-Solano Water Authority, the City will implement a water strategy that serves the City and addresses potential impacts to water users and the environment as a part of the approval process for new development.</i> |
| <i>Policy CFS-6.3</i> | <i>As part of the Suisun-Solano Water Authority, the City will maintain, and require as a condition of approval for new development, actions that ensure adequate emergency water supplies.</i>  |
| <i>Policy CFS-6.4</i> | <i>New developments shall include water conservation technologies, such as low-flow toilets, efficient clothes washers, and efficient water-using industrial equipment, in accordance with State law.</i>                                    |

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### **Program CFS-6.1    Water Supply**

The City will seek funding to explore opportunities to increase local availability of water supply, in collaboration with Solano Irrigation District, Solano County Water Agency, and other interested agencies.

## Wastewater

Sewer service is provided to Suisun City residents and businesses by the Fairfield-Suisun Sewer District (FSSD), an independent special district established to manage wastewater collection and treatment. The Fairfield-Suisun Sewer District is responsible for wastewater collection and treatment within its service area of Fairfield, Suisun City, parts of unincorporated Solano County, and Travis Air Force Base (Travis AFB).

The FSSD's collection system includes 13 wastewater pump stations and approximately 70 miles of gravity sewers ranging in size from 12-inches to 48-inches in diameter. The City of Fairfield and the City of Suisun City own and operate sewers 10-inches and smaller in diameter. Travis AFB owns all on-site sewers. Service laterals from individual homes and businesses to the sewer main are the responsibility of the property owner.

Wastewater flows by gravity or is pumped by smaller stations to four major pump stations which pump wastewater to the treatment plant. The major pump stations are the Suisun Pump Station, Central Pump Station, Cordelia Pump Station and Inlet Pump Station. Suisun City is served by Suisun Pump Station and three smaller stations: Lawler I Pump Station, Lawler II Pump Station, and Crystal Street Pump Station.

The FSSD recently completed a treatment plant expansion that increased the average dry weather capacity to 23.7 mgd and peak-flow capacity to 52.3 mgd. The wastewater treatment processes includes screening, primary treatment, intermediate treatment by oxidation towers and intermediate clarifiers, secondary treatment with aeration basins, and secondary clarifiers and tertiary treatment via filtration and disinfection. Waste solids are thickened and treated in anaerobic digesters then solids are further concentrated before being disposed at the Potrero Hills Landfill. A treatment plant project to replace chlorine disinfection with ultra-violet disinfection was completed in 2011. The Central-Suisun Forcemain Equalization Project, completed in 2013, increased the peak capacity of the Suisun Pump Station from 31.7 to 38.3 mgd.

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### **Goal CFS-7    Provide for adequate sewage system capacity, treatment, and disposal.**

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**Objective CFS-7    Facilitate Fairfield-Suisun Sewer District's Master Plan and ensure that future sewage systems are designed to meet or exceed all applicable water quality standards and are located to protect waterways, the Suisun Marsh, and other groundwater resources.**

*Policy CFS-7.1    The City will establish and maintain standards for the location and capacity of sewer infrastructure and ensure sufficient capacity to serve buildout under the 2035 General Plan.*

*Policy CFS-7.2    New developments will be required to contribute on a fair-share basis toward implementation of system improvements, as determined by the City Engineer.*

*Policy CFS-7.3    The City will encourage the use of recycled water for outdoor irrigation, toilet flushing, fire hydrants; commercial and industrial processes, carwashes, concrete batching, laundromats; dust control; parks and other landscaped areas, and other appropriate water-intensive uses. New developments that include recycled water systems should enjoy proportionally lower development impact fees.*



# Storm Drainage and Flooding

The City of Suisun City Public Works Department maintains an inventory of facilities and co-ordinates necessary improvements to ensure capacity required to serve new development. The City's Storm Water Ordinance is designed to eliminate non-storm water discharges to the City's storm water system, control the discharge to the City's storm water system from spills, reduce dumping or disposal of materials other than storm water, and to minimize pollutants in storm water discharges to the maximum extent practicable according to the Municipal Regional Permit (MRP).

Except for localized flooding and standing water that may occur during brief, intense storms when runoff exceeds storm drain system capacity, creek flows along McCoy Creek, Laurel Creek, and Union Avenue Creek would likely be contained within the existing creek bank during a 100-year storm. Flooding in Suisun City is generally the result of high volume riverine flows concurrent with high tides and/or storm surges.

As a participant in the National Flood Insurance Program (NFIP), Suisun City is required to adhere to floodplain management policies that represent sound land use practices. The Federal Emergency Management Agency (FEMA) administers the NFIP through the Federal Insurance Administration. FEMA produces Flood Insurance Rate Maps (FIRMS) which identify flood hazard areas and restrict development in these areas for the communities participating in the NFIP.

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## **Goal CFS-8    Provide storm drainage and flood protection systems that protect property, ensure public safety and environmental health, and prevent erosion and flooding.**

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### **Objective CFS-8    Maintain adequate storm drainage and plan for phased improvements to drainage infrastructure to serve new growth and address existing deficiencies**

- |                       |  |
|-----------------------|--|
| <i>Policy CFS-8.1</i> | <i>The City will establish and maintain standards for stormwater infrastructure that ensure sufficient capacity to serve buildout under the 2035 General Plan.</i>   |
| <i>Policy CFS-8.2</i> | <i>New developments will be required to construct and dedicate facilities for drainage collection, conveyance, and detention and/or contribute on a fair-share basis to area-wide drainage facilities that serve additional demand generated by the subject project.</i>   |
| <i>Policy CFS-8.3</i> | <i>The City will identify funding opportunities and leveraging this funding, as appropriate, to improve drainage infrastructure in existing developed areas and to encourage infill development consistent with the 2035 General Plan.</i>   |
| <i>Policy CFS-8.4</i> | <i>The City will facilitate multi-benefit projects to use existing and future recreational open space, public rights-of-way, and other lands to also provide stormwater drainage conveyance, filtration, and detention. Applicable impact and in-lieu-fees should be reduced to reflect these overlapping uses for developments that include multi-use open space.</i> |
| <i>Policy CFS-8.5</i> | <i>The City will consider the adoption of a reduced drainage fee for developments that are designed with low impact development (LID) that off-set increased costs of the installation of LID features, as appropriate.</i>  |

- Policy CFS-8.6      The City will coordinate with ongoing regional efforts to improve flood protection, consistent with State and federal regulations.*
- Policy CFS-8.7      The City will develop fair-share impact fees for new development to support flood protection improvements needed to meet State and federal standards, while also seeking outside funding that may be available for use in flood protection improvements.*

## Solid Waste and Recycling

Solano Garbage Company (SGC) is the current franchise that provides weekly solid waste collection and disposal services to residents and businesses in Suisun City. SGC service area covers the cities of Suisun City and Fairfield, as well as unincorporated areas of central Solano County. Solid waste is delivered to Potrero Hills Landfill. 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.<sup>3</sup>

The California Integrated Waste Management Act of 1989 (AB939) requires each city and county to divert 50 percent of its waste stream from landfill disposal by the year 2000. Diversion may include reducing the total amount of waste generated through source reduction, recycling, composting, and transformation programs. (AB 939 defines waste generation as waste disposed, plus waste diverted through source reduction, recycling, composting, and transformation.)

SGC exclusively provides bi-weekly curbside recycling and green waste services for residents in Suisun City, Fairfield, and unincorporated Solano County. Each residential customer is provided a bin for green waste and a bin for recycling. SGC also collects source-separated cardboard and other materials from high-volume commercial and industrial generators.

The City's diversion rate is currently within the State limit. In 2009, the City of Suisun City generated 1,860 tons of recyclables (14.9 percent of city's waste generated was recycled). In addition, SGC estimates that the City of Suisun City diverted 3,036 tons of green waste in 2009 which translates to a diversion rate of 24 percent of the city's waste generated.

SGC delivers recyclables to the Integrated Resource Recovery Facility (IRRF), which opened in January 1997 as a recyclables processing facility. West County Resource Recovery, Inc. operates the IRRF where all of the material collected by SGC curbside recycling is processed.

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### **Goal CFS-9    Provide safe, convenient, and environmentally-responsible waste disposal and recycling services.**

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**Objective CFS-9    To ensure adequate solid waste disposal services and increase recycling and reuse among residents, businesses, and the City.**

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<sup>3</sup> California Department of Resources Recycling and Recovery). 2013. Solid Waste Information System. Facility/Site Summary Details: Potrero Hills Landfill. (48-AA-0075).





- Policy CFS-9.1      The City will ensure adequate waste disposal, recycling, and reuse services, in compliance with State law, including programs that improve public access to these services.*
- Policy CFS-9.2      New developments will be required to demonstrate adequate capacity to accommodate solid waste demand, including processing, recycling, transportation, and disposal.*
- Policy CFS-9.3      The City will use recycled materials for operations and maintenance, as feasible, and encourage programs that re-use recycled materials and solid waste.*
- Policy CFS-9.4      The City will continue to coordinate with the County and other municipalities to ensure compliance with local and State requirements regarding the proper disposal of toxic and hazardous materials and waste, such as the Police Department's pharmaceutical "take back" program.*
- Policy CFS-9.5      New developments and significantly remodeled existing uses will be required to incorporate convenient exterior storage areas for solid waste, recyclables, and green waste.*



# Chapter 9

## Public Health and Safety

Adopted March 21, 2023  
Resolution No. 2023-31

### Introduction

The goals, objectives, policies, and programs in this Public Health and Safety Element ensure that the City of Suisun City (City) appropriately considers public health and safety in decisions related to land development, the provision of services, and public investments.

This Element combines two of the mandatory subject matters under state law:

- 1) Noise and its impact on people, and
- 2) Safety hazards that could threaten people and property.

The noise and safety elements have been combined since noise is commonly cited as a health and safety issue. In addition to topics that are mandatory for general plans under state law, this Element also addresses "optional" issues that are priorities for Suisun City.<sup>1</sup>

Following are the City's goals, objectives, policies, and programs addressing:

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<sup>1</sup> Please refer to Government Code Section 65302 (g) (1) for more details.

- Public health
  - Noise and vibration;
  - Air quality, greenhouse gas emissions, and climate change;
  - Water quality; and
  - Healthy communities.
- Safety
  - Hazards and hazardous materials;
  - Flooding and sea level rise;
  - Fire risk;
  - Geologic, soils, and seismic hazards;
  - Climate change hazards;
  - Emergency response; and
  - Travis Air Force Base.

## Relationship to Other Elements, Plans, and Studies

Public health is intrinsically linked with policies in the Land Use, Transportation, Community Character and Design, Open Space and Conservation, Community Facilities, and Housing Elements.

Transportation-related air pollution, including ground-level ozone and particulate matter, contributes to respiratory illnesses and cardiovascular diseases. The public health costs of pollution from cars and heavy-duty vehicles alone have been estimated at between \$40 billion and \$64 billion per year in the United States. The number of walking trips by U.S. adults dropped by 42 percent between 1975 and 1995, while vehicle miles traveled has increased four times faster than the population. Obesity has been correlated with automobile-dependent development patterns. Traffic-related fatalities are also a serious public health concern.<sup>2</sup>

The City can set the stage for healthy community design through its land use and transportation planning policies. 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. People that live in mixed-use, walkable communities have a 35 percent lower risk of obesity. According to data from 33 California cities in 2006, the obesity rate among adults who drove the most was about three times higher than the group that drove the least. An American who switches to transit (which

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<sup>2</sup> Fredrich Kahrl and David Roland-Holst, California Climate Risk and Response. Department of Agricultural and Resource Economics, University of California, Berkeley. November 2008



includes walking between destinations) for the daily commute can reduce lifetime medical expenses by \$5,500.<sup>3,4,5</sup>

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. The City can help make walking and bicycling more desirable by improving transportation facilities and ensuring housing and destinations are within proximity to one another.<sup>6,7</sup>

Just as with public health, safety issues are also linked to the Land Use, Transportation, Community Character and Design, Open Space and Conservation, and Community Facilities Elements. For example, the design of a community and distribution of land uses should reflect the location of hazards and hazardous conditions. Most communities avoid adverse effects related to hazardous conditions through land use planning, when possible. For example, if a particular area tends to be subject to the threat of fires or flooding, development of inhabited buildings would normally be limited or prohibited. Geologic or soils constraints could make certain land uses inappropriate or infeasible. An inefficient transportation network could adversely affect emergency response efforts.

The presence of Travis Air Force Base is of particular importance for Suisun City. Some operations at the Base create compatibility issues for certain land uses. It is necessary to limit land use and development around the Base to protect sensitive land uses and prevent interference with the Travis Air Force Base mission as it exists today and may evolve in the future.

## Local Hazard Mitigation Plan

The City, in partnership with Solano County and participating partners, prepared the Solano County Multi-Jurisdiction Hazard Mitigation Plan (MJHMP) and the Suisun City Annex for the Suisun City planning area in accordance with the Disaster Mitigation Act of 2000 (DMA 2000) and the Federal Emergency Management Agency's (FEMA) 2011 Local Hazard Mitigation Plan guidance. The MJHMP incorporates a process where hazards are identified and profiled, the people and facilities at risk are analyzed, and mitigation actions are developed to reduce or eliminate hazard risk. Of particular importance in Suisun City are the potential risks associated with seismic activity, flooding, sea level rise, and hazardous materials. The implementation of these mitigation actions, which include both short-term and long-term strategies, involve planning, policy changes, programs, projects, and other activities. The Solano County MJHMP and jurisdictional annex specific to hazards in Suisun City, is hereby incorporated into the Public Health and Safety Element by reference. The Local Hazard Mitigation Plan can be found at this location:

<https://www.suisun.com/files/sharedassets/suisuncity/departments/development-services/planning-commission/documents/local-hazard-mitigation/solano-mjhmp-vol-1-fema-approval-and-adoptions.pdf>

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<sup>3</sup> American Lung Association, Land Use, Climate Change & Public Health Issue Brief. Spring 2000.

<sup>4</sup> Michael R. Bloomberg, Rohit T. Aggarwalam, Think Locally, Act Globally: How Curbing Global Warming Emissions Can Improve Local Public Health. 2008.

<sup>5</sup> Jacqueline Kerr and the Robert Wood Johnson Foundation's Active Living Research Program, Designing for Active Living Among Adults. Spring 2008.

<sup>6</sup> Center for Clean Air Policy, Cost-Effective GHG Reductions through Smart Growth & Improved Transportation Choices. 2009.

<sup>7</sup> Surface Transportation Policy Project, Clearing the Air: Public Health Threats from Cars and Heavy Duty Vehicles – Why We Need to Protect Federal Clean Air Laws. 2003.



and

[https://www.suisun.com/files/sharedassets/suisuncity/departments/development-services/planning-commission/documents/local-hazard-mitigation/solano-mjhmp-vol-2-fema\\_approval\\_and\\_adoptions.pdf](https://www.suisun.com/files/sharedassets/suisuncity/departments/development-services/planning-commission/documents/local-hazard-mitigation/solano-mjhmp-vol-2-fema_approval_and_adoptions.pdf).

## Vulnerability Assessment

Under California law, the Public Health and Safety Element is required to include a vulnerability assessment that looks at how people, buildings, infrastructure, and other key community assets may be affected by climate change and the degree to which they are vulnerable. The City conducted a Climate Change Vulnerability Assessment in the fall of 2022 to analyze Suisun City's susceptibility to climate-related hazards. Suisun City's vulnerability assessment assesses how 10 climate-related hazards (agricultural and forestry pests, drought, extreme heat and warm nights, human health hazards, inland flooding, landslides, sea level rise, severe weather, shoreline flooding, and wildfire and smoke) may affect 59 different population groups and community assets. Each population or asset received a score of V1 (minimal vulnerability) to V5 (severe vulnerability) for each relevant climate-related hazard.

The Public Health and Safety Element includes goals, policies, and implementation actions to increase community resilience and help lower vulnerabilities, particularly for the populations and assets that received a score of V4 or V5 in the Vulnerability Assessment. A full list of the Vulnerability Assessment methods and results is included in the Public Health and Safety Element Background Report, which is attached as Appendix A.

## Related General Plan Guiding Principles

The City Council directed staff to incorporate a set of Guiding Principles into the General Plan Update, several of which are relevant to this Element, including the following.

### Public Safety and Community Preparedness

Suisun City will strive to protect the community and minimize vulnerability to disasters.

- Foster neighborhood resilience through community planning practices, fire safety measures, building codes/seismic requirements, and effective code enforcement.
- Protect life and property through reliable public safety services, as well as active, sensitive service to members of the community in need.
- Minimize the City's vulnerability to natural and human-caused disasters and strengthen the City's emergency response systems.



## Sustainability

Suisun City will practice economically, fiscally, and environmentally responsible municipal decision making to avoid shifting today's costs to future generations.

- Encourage a healthy living environment.
- Preserve and enhance natural resources and minimize negative environmental impacts.

## Goals, Objectives, Policies, and Programs

Following are Suisun City's goals, objectives, policies, and programs related to public health and safety. Public health and safety are inherently connected issues. The City's public health policies address potential effects of General Plan buildout and regional development on human health. The City's safety policies protect citizens from natural disasters, human-caused disasters, and other incidents that could have a negative impact on public and environmental health, as well as property.

## Public Health

Public health policies focus on improving the health of the community and quality of life of residents. The General Plan is intended to prevent adverse health conditions and accommodate healthy lifestyles.

## Noise and Vibration

Unregulated noise can cause stress and otherwise affect the well-being of City residents. However, with proper planning, unwanted noise can be managed in a way that reduces the negative impact of noise on City residents and visitors. Noise and vibration policies in this Element provide the basis for noise control and abatement and the protection of people in Suisun City from excessive noise exposure.

Noise is commonly defined as unwanted sound. Excessive noise can pose a health problem. The health effects of noise arise from the interference with human activities, such as sleep, conversation, and tasks that demand concentration or coordination.

Sound is the audible expression of vibration through solid, liquid, or gas. To measure sound directly as changes in air pressure and determine whether such sound is excessive or unwanted (i.e., noise), would require a very large and awkward range of numbers. To avoid this complexity, the decibel (dB) scale was devised. The decibel scale presents noise levels in multiples of 10 (a logarithmic scale). The decibel scale uses the threshold of human hearing as a point of reference with human sensitivity.

It is common to describe community noise in terms of the "ambient" or "background": noise level, defined as the all-encompassing sound level associated with a given noise environment. A statistical tool to measure the ambient noise level is the equivalent energy noise level ( $L_{eq}$ ), a constant noise level that would result in the same total sound energy being produced over a given period (usually one hour). The  $L_{eq}$  is the foundation

of other methods by which noise is measured and described, and it shows a very strong correlation with human perception of, and response to noise.

The two most common methods to describe noise are the day-night average level ( $L_{dn}$ ) and the Community Noise Equivalent Level (CNEL).  $L_{dn}$  is the average hourly ambient noise ( $L_{eq}$ ) over a 24-hour day, with a 10-decibel penalty applied to the nighttime  $L_{eq}$  (10:00 pm to 7:00 am). The nighttime penalty is based on the assumption that people react to nighttime noise exposures as though they were twice as loud as daytime exposures. CNEL is the same as the  $L_{dn}$ , except that an additional penalty of 5 decibels is applied to the evening  $L_{eq}$  (7:00 pm to 10:00 pm).

Please refer to the Volume II of the General Plan, Chapter 9, to review Noise Background Report, under separate cover and available on the City's website, for more fundamental noise information.

## Noise-Sensitive Land Use and Noise Sources

Noise-sensitive land uses include parks, schools, residences, places of worship, and medical and other health care facilities. These land uses are distributed throughout the city. As addressed in the Noise Background Report, the primary sources of noise in the city include roadways (State Route [SR] 12), railroad operations (Union Pacific Railroad), and aircraft operations (Travis Air Force Base).

- **Roadways.** Transportation noise is a significant issue in areas along highways and other high-volume roadways. In affected areas, these noise impacts must be considered in the determination of appropriate land uses. Exhibit NOI-2 of the Background Report illustrates the existing 60 dBA and 65 dBA  $L_{dn}$  noise contours associated with vehicular traffic and Table 9-2 of the Background Report shows existing traffic volumes for the major roadways in Suisun City and estimated distances to the 65 and 60 dBA  $L_{dn}$  traffic noise contours.
- **Railroads.** There are two railroad lines that operate in Suisun City. The California Northern Railroad (CFNR) operates 24 miles of the Schellville Sub line from Suisun City to Schellville. The Schellville Sub line enters Suisun City from the west and parallels Cordelia Street then traverses Suisun City in an east-west direction from the Union Pacific Railroad (UPRR) line to the westernmost city boundary. The CFNR Schellville Sub line operates approximately six daily train trips through Suisun City. UPRR operates the Overland Route in the city. The UPRR Overland Route traverses the northern boundary of the city and the western edge of the downtown area, carrying both freight and Amtrak passenger trains. The 60 dBA  $L_{dn}$  contour extends out approximately 361 feet from the center of the tracks, while the 65 dBA  $L_{dn}$  contour is at approximately 168 feet. Table 9-2 of the Background Report illustrates the distances to the 65 and 60 dBA  $L_{dn}$  noise contour from the railroad lines.
- **Travis Air Force Base.** Travis Air Force Base (Travis AFB) is in the central portion of Solano County and borders the northeastern boundary of the city. Travis AFB operates two runways designed to handle heavy transport aircraft (e.g., C-5s). Scheduled missions, practice takeoffs, landings, instrument approaches, and run-up activities generally occur during daytime hours. Exhibit NOI-3 of the Background Report illustrates the noise contours associated with Travis AFB operations.<sup>8</sup> Areas in the eastern portion of the city's sphere of influence (SOI) are substantially affected by Travis AFB operations. Developed portions of the city are within the 60-65 CNEL noise contours of Travis AFB.

<sup>8</sup> Solano County ALUC, 2015. Travis Air Force Base Land Use Compatibility Plan.  
<https://www.solanocounty.com/civicax/filebank/blobdload.aspx?BlobID=34765>.



- **Stationary Sources.** With the exception of City parks, most of the City's stationary noise-producing land uses are adjacent to railroad tracks and/or major roadways in the Planning Area (e.g., SR 12). The noise levels generated by these sources vary substantially and the ambient noise environment in the immediate vicinity of these facilities includes noise generated by other industrial facilities, local vehicle traffic, and railroad activities. In addition, Suisun City does not include large areas of industrial land uses and activities associated with these land uses primarily occur indoors and thus do not create any discernable noise outside of buildings.

Existing noise levels from roadway and railroad traffic in Suisun City are shown in Exhibit 9-1. Noise levels from operations at Travis AFB are shown in Exhibit 9-2.

## Vibration

Vibration is the periodic oscillation of a medium (solid object, liquid, or gas). The rumbling sound caused by the vibration of room surfaces is called groundborne noise. Sources of groundborne vibrations include natural phenomena (e.g., earthquakes, volcanic eruptions, sea waves, landslides) or human-made causes (e.g., explosions, machinery, traffic, trains, construction equipment). Vibration sources may be continuous, such as factory machinery, or intermittent, such as explosions.

Noise and vibration policies will be used to guide decisions concerning land use and the location of roads, industrial developments, and other common sources of noise. Noise-sensitive land uses will be planned with existing and future estimated noise levels in mind. For the purposes of this Element, noise- and vibration-sensitive uses include residences, schools, hospitals, rest homes, long-term medical or mental care facilities, and similar uses.

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### Goal PHS-1 Ensure that Noise Does Not Substantially Reduce the Quality of Urban Life.

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#### Objective PHS-1 Require review and conditioning of new developments to mitigate noise impacts.

- |                       |   |
|-----------------------|---|
| <i>Policy PHS-1.1</i> | <i>Large-scale commercial land uses that could require frequent large truck deliveries – 50 or more trips per day - shall not be developed within new or existing neighborhoods.</i>  |
| <i>Policy PHS-1.2</i> | <i>New development shall be designed to disperse vehicular traffic onto a network of fully connected smaller roadways.</i>  |
| <i>Policy PHS-1.3</i> | <i>Industrial and other noise-generating land uses be located away from noise-sensitive land uses<sup>9</sup> or should use noise attenuation methods, such as enclosing substantial noise sources within buildings or structures, using muffling devices, or incorporating other technologies designed to reduce noise levels.</i> |

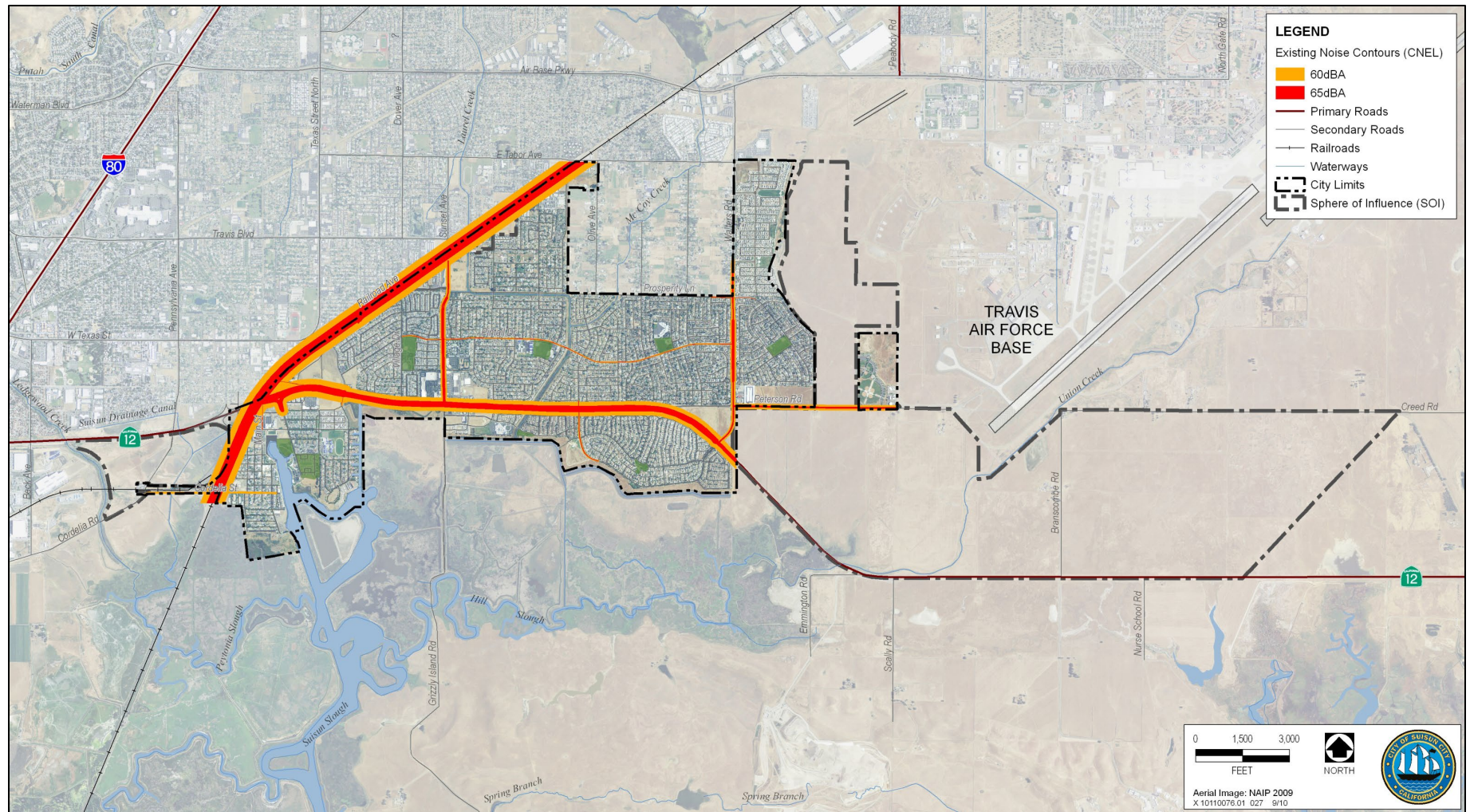
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<sup>9</sup> For the purposes of this Public Health and Safety Element, noise-sensitive land uses include schools, hospitals, rest homes, long-term care, mental care facilities, and residences. Outdoor activity areas are considered to be the portion of a noise-sensitive property where outdoor activities would normally be expected (i.e., patios of residences and outdoor instructional areas of schools). Outdoor activity areas for the purposes of this element do not include gathering spaces alongside transportation corridors or associated public rights-of-way.



CITY OF SUISUN CITY GENERAL PLAN

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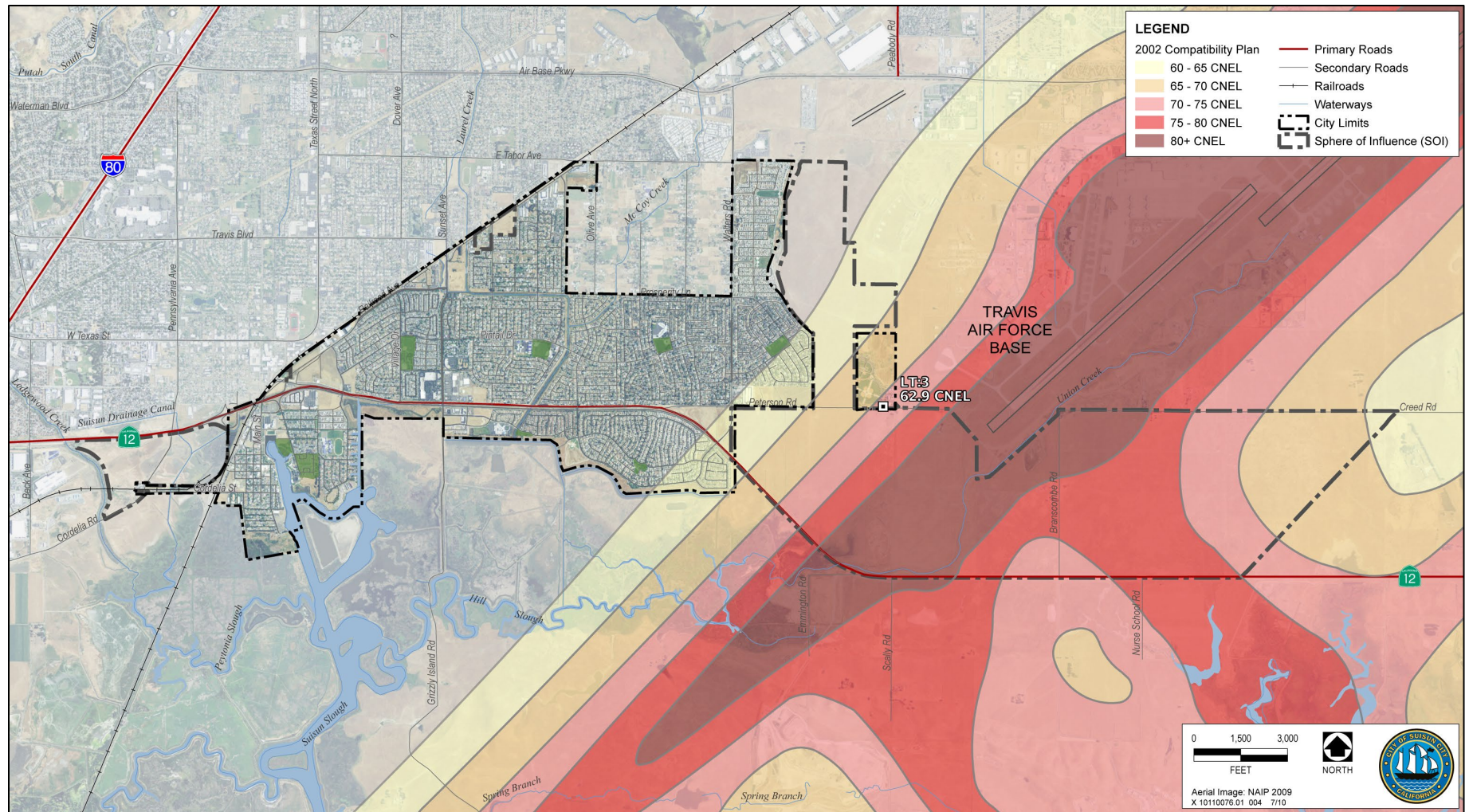
Source: AECOM 2014 based on traffic provided by Fehr & Peers 2010

**Exhibit 9-1**

**Existing Noise Contours**







Source: Travis Air Force Base Land Use Compatibility Plan 2002

**Exhibit 9-2**

**Travis Air Force Base Noise Contours**







- 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.*

**Table 9-1  
Maximum Allowable Noise Exposure from Transportation Noise Sources at  
Noise-Sensitive Land Uses**

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 Residential in Mixed-Use Designations)	70	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	--	--

Notes: Noise-sensitive land uses include schools, hospitals, rest homes, long-term care, mental care facilities, residences, and other similar land uses. Outdoor activity areas are considered to be the portion of a noise-sensitive property where outdoor activities would normally be expected (i.e., patios of residences and outdoor instructional areas of schools). Outdoor activity areas for the purposes of this element do not include gathering spaces alongside transportation corridors or associated public rights-of-way. Where development projects or roadway improvement projects could potentially create noise impacts, an acoustical analysis shall be required as part of the environmental review process so that noise mitigation may be included in the project design. Such analysis shall be the financial responsibility of the applicant and be prepared by a qualified person experienced in the fields of environmental noise assessment and architectural acoustics. Mitigation strategies shall include site planning and design over other types of mitigation.

- Policy PHS-1.5**      *It is the City's policy to allow outdoor noise levels in residential land uses located in commercial and mixed-use areas, including the Downtown Waterfront Specific Plan Area up to 70 dBA L<sub>dn</sub>.*
- 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.*
- 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-1.9**      *The City shall require all feasible noise mitigation to reduce construction and other short-term noise impacts as a condition of approval.*

*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.*

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### **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 measured at outdoor activity areas of existing and planned noise-sensitive land uses.

If existing noise levels exceed acceptable levels in Table 9-2 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 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.

**Table 9-2  
Noise Level Performance Standards for New Projects Affected By, or Including, Non-Transportation Noise Sources**

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).

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### Program PHS-1.2: Review and Conditioning of Noise-Generating New Uses

New developments that generate noise will also be reviewed and feasible mitigation 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 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, the standard becomes the ambient level plus 5 dBA.
- Reduce the applicable standards in Table 9-3 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.

**Table 9-3**  
**Noise Level Performance Standards for Non-Transportation Noise Sources**

Cumulative Duration of a Noise Event <sup>1</sup> (Minutes)	Maximum Exterior Noise Level Standards <sup>2</sup>	
	Daytime <sup>3,5</sup>	Nighttime <sup>4,5</sup>
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).

### Program PHS-1.3 Train Quiet Zone

The City will coordinate with Union Pacific Railroad, the Federal Railroad Administration, and the City of Fairfield to establish a Quiet Zone. As funding is available, the City will collaborate with other agencies improve crossings with appropriate technologies to implement the Quiet Zone. The City will coordinate with Union Pacific to reduce or eliminate the use of horns in noise-sensitive areas of the community with the installation of alternative crossing devices.

### 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.

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**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.

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**Goal PHS-2 Minimize Vibration Impacts Associated with Development Projects and Nearby Land Uses**


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**Objective PHS-2** Achieve City and other relevant agency vibration performance standards.

*Policy PHS-2.1 New developments that propose vibration-sensitive uses within 100 feet of a railroad or heavy industrial facility shall 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.*

## **Air Quality, Greenhouse Gas Emissions, and Climate Change**

### **Air Quality**

Air pollution affects human health, harms the natural and the built environment, damages crops, and changes the climate of the earth. Air pollution can have local, regional, and global sources and effects.

Air quality is directly related to land use and development patterns and their relationship to transportation systems that enable or inhibit multiple means of travel. The location of highways, railroads, industries, and other sources of air emissions in relation to houses, schools, and other sensitive land uses is an important consideration in land use planning. Air quality is also affected by building energy use—the amount, sources, and efficiency of use of energy.

Toxic air contaminants (TACs) are airborne substances that can cause acute (short-term) and chronic (long-term) health problems, including cancer. TACs include a variety of substances from many different sources, such as gasoline stations, highways and railroads, dry cleaners, industrial operations, power plants, and painting operations. The effects of TACs are mostly experienced locally (close to the source).





Stationary sources of TACs include gasoline stations, dry cleaners, and diesel backup generators, which are subject to Bay Area Air Quality Management District (BAAQMD) permit requirements. On-road motor vehicles and off-road sources, such as construction equipment, ships, and trains are also common sources of TACs.

Particulate matter (dust) and ozone can also have adverse human health effects. Reactive organic gases (ROGs) and oxides of nitrogen (NO<sub>x</sub>), which combine to form ozone, have decreased in the Bay Area over the past several years as a result of more stringent motor vehicle standards and cleaner-burning fuels. Consequently, peak 1-hour and 8-hour ozone concentrations in the San Francisco Bay Area Air Basin (SFBAAB) have declined overall by about 18 percent respectively during the last 20 years.

According to BAAQMD, particulate matter less than 2.5 microns in diameter (PM<sub>2.5</sub>) is the most harmful air pollutant in the Bay Area relative to the overall impact on public health. Direct emissions of both PM<sub>10</sub> and PM<sub>2.5</sub> increased slightly in the Bay Area between 1975 and 2005 and are projected to increase through 2020. These increases are due to growth in emissions from area-wide sources, primarily fugitive dust sources.

Criteria air pollutant emission sources in Suisun City include stationary, area, and mobile sources. According to the 2008 emissions inventory for Solano County, the majority of ROG and NO<sub>x</sub> emissions are attributable to mobile sources, while area-wide sources are the greatest contributor of particulate matter emissions.

Major stationary sources of air pollutant emissions within Solano County include fuel combustion from electric utilities and other processes, waste disposal, and petroleum production. As discussed previously, the local districts issue permits to various types of stationary sources, which must demonstrate implementation of Best Available Control Technology (BACT).

Area-wide sources of emissions include consumer products, application of architectural coatings, residential fuel combustion, farming operations, construction and demolition, road dust, fugitive dust, landscaping, fires, and other miscellaneous sources. Paved road dust is the largest contributor to particulate matter emissions.

On-road and other mobile sources are the largest contributors of ozone precursor emissions within the county. On-road sources consist of passenger vehicles, trucks, buses, and motorcycles, while off-road vehicles and other mobile sources comprise heavy-duty equipment, boats, aircraft, trains, recreational vehicles, and farm equipment. The major roadway serving the Suisun City area is SR 12.

## Greenhouse Gases and Climate Change

Greenhouse gases (GHGs) play a critical role in determining the earth's surface temperature. Infrared radiation is absorbed by GHGs, resulting in a warming of the atmosphere. This phenomenon, known as the "greenhouse effect," is responsible for maintaining a habitable climate on earth. However, human activities have increased atmospheric GHG levels in excess of natural ambient concentrations. This has led to a trend of unnatural warming of the earth's atmosphere and oceans, with corresponding effects on global circulation patterns and climate.<sup>10</sup>

Based on the serious threat that climate change poses to the economic well-being, public health, natural resources, and the environment of California, the State of California enacted legislation intended to reduce GHG emissions. The Global Warming Solutions

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<sup>10</sup> Intergovernmental Panel on Climate Change. 2007. Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the IPCC. Geneva, Switzerland. Available: <http://www.ipcc.ch/ipccreports/ar4-wg1.htm>.

Act of 2006, also known as Assembly Bill 32 (AB 32) establishes regulatory, reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions and a cap on statewide GHG emissions. AB 32 requires reduction of statewide GHG emissions to 1990 levels by 2020. The California Air Resources Board (CARB) adopted its Climate Change Scoping Plan to identify the main strategies California will implement to achieve GHG emissions reductions from each emissions sector of the state's GHG inventory, consistent with the provisions of AB 32. Passed in September 2022, AB 1279 sets a GHG reduction target of achieving carbon neutrality by 2045 (meaning that any GHG emissions not reduced must be offset, removed, or otherwise balanced out). Achievement of this target must include a minimum reduction of GHG emissions 85% below 1990 levels by 2045. In November 2022, CARB updated the Scoping Plan to reflect the requirements of AB 1279.

Various local governments throughout California have enacted plans, programs, policies, and standards intended to reduce GHG emissions and take advantage of the various co-benefits of GHG efficient planning, such as lowering business operating costs, reducing household transportation costs, improving air quality and the public health, creating more efficient transportation options, among other benefits.<sup>11</sup>

Oftentimes, the most effective way to reduce emissions is through broad-scale planning efforts. General plans, community plans, specific plans, and GHG reduction plans are often the most appropriate place for many communities to establish community GHG goals, objectives, policies, and standards for existing and new development. A long-term, comprehensive, integrated plan for reducing overall GHG emissions to a less-than-significant level can be preferable to a project-by-project analysis and mitigation of impacts. A programmatic approach can help to provide more predictable and consistent mitigation requirements based on an overall plan and emissions reduction target. Cities, counties, and other agencies can collaborate to design and fund a more complete and connected transportation network that encourages walking, bicycling, and public transit to provide a more GHG-efficient context for new developments.

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## Goal PHS-3 Minimize Exposure to Air Pollutants

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### Objective PHS-3 Reduce emissions that produce harmful air pollutants.

<i>Policy PHS-3.1</i>	<i>The City will ensure that new industrial, manufacturing, and processing facilities that may produce toxic or hazardous air pollutants are 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.</i>
<i>Policy PHS-3.2</i>	<i>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.</i>
<i>Policy PHS-3.3</i>	<i>The City will require projects to reduce operational emissions from vehicles, heating and cooling, lighting, equipment use, and other proposed new sources.</i>

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<sup>11</sup> Some of the co-benefits at the statewide level were outlined in Governor Schwarzenegger's Executive Order S-3-05.



- 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 work the Solano County Department of Health and Social Services to help community members access clean air spaces and personal protective equipment during poor air quality days.*

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### **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 percent 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 (CEQA) documents, with the objective of avoiding or mitigating significant impacts.

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### **Program PHS-3.2      Standard Construction Mitigation**

The City will require new developments to incorporate applicable Basic Construction Mitigation Measures, which are maintained by the BAAQMD. This includes standard mitigation measures designed to minimize fugitive PM dust and exhaust emissions from construction activities.

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, the City will require new developments to incorporate BAAQMD Additional Construction Mitigation Measures.

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### **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 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.

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## **Goal PHS-4    Reduce Local Greenhouse Gas Emissions and Reduce the Local Effects of Global Climate Change**

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### **Objective PHS-4    Reduce the City's contribution to global climate change.**

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|-----------------------|--|
| <i>Policy PHS-4.1</i> | <i>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 attempt to orient its plans, policies, and regulations to take best advantage of regional and statewide AB 32-related infrastructure investment and other programs.</i> |
| <i>Policy PHS-4.2</i> | <i>The City will guide land use change, direct investments, and apply its fees and programs to encourage more energy-efficient development patterns and construction standards, as feasible.</i>   |
| <i>Policy PHS-4.3</i> | <i>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, ecosystem restoration, and other projects to reduce local greenhouse gas emissions.</i>   |
| <i>Policy PHS-4.4</i> | <i>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 decrease local GHG emissions.</i>   |
| <i>Policy PHS-4.5</i> | <i>The City will, as feasible, conduct regionally coordinated land use, transportation, and public facility planning to support energy-efficient local development.</i>  |

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### **Program PHS-4.1    Greenhouse Gas Reduction Program**

The City will seek funding to develop a greenhouse gas (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 plan:

- 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.

## Water Quality

Good water quality is essential to the health of a community. In Suisun City, water supplies for drinking are provided by the Solano County Water Agency, which delivers water supplies from other water sources outside of the city. Suisun City's proximity to Suisun Marsh, however, makes it imperative that water quality in stormwater runoff, upstream of the marsh, and in wastewater discharges are maintained at a high level of quality.

Suisun City is required to comply with the San Francisco Bay Regional Water Quality Control Board (RWQCB) Municipal Regional Stormwater National Pollutant Discharge Elimination System (NPDES) Permit Order R2-2022-0018, NPDES Permit No. CAS612008, issued May 11, 2022. This permit replaces the formerly separate municipal stormwater permits within the San Francisco Bay RWQCB area with a regional permit for 76 Bay Area municipalities, including Suisun City and the Fairfield-Suisun Urban Runoff Management Program, formed by Suisun City and Fairfield. Water quality in the Planning Area is also protected by treatment and disposal of wastewater through the Fairfield-Suisun Wastewater Treatment Plant (WWTP), which is operated by the Fairfield Suisun Sewer District (FSSD).

Section 303(d) of the Clean Water Act requires states to develop lists of water bodies (or segments of water bodies) that will not attain water quality standards after implementation of minimum required levels of treatment by point source dischargers (e.g., municipalities and industries) and requires states to develop a total maximum daily load (TMDL) for each of the listed pollutants and water bodies. A TMDL is the amount of loading that the water body can receive and still meet water quality standards.

This list, called the Clean Water Act Section 303(d) list, identifies one water body within the Planning Area that does not meet the TMDL standard. Ledgewood Creek, which is in the extreme western portion of the City's SOI, is listed for the pesticide diazinon, which likely entered the creek through urban runoff and storm sewers. In addition to Ledgewood Creek, Suisun's City's other receiving waterways, Suisun Bay, Suisun Marsh wetlands, and other various Delta waterways, are included on the Clean Water Act Section 303(d) list for various constituents, including, but not limited to, mercury, nickel, selenium, chlordane, DDT, PCBs, chlorpyrifos, and exotic species.



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## Goal PHS-5 Maintain and Improve Water Quality

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**Objective PHS-5** Maintain and improve water quality in a way that provides public and environmental health benefits.

- 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* The City will encourage the phasing out of commercial and industrial building materials that leach metals into stormwater runoff.
- Policy PHS-5.3* 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, to reduce stormwater runoff levels, improve infiltration to replenish groundwater sources, reduce localized flooding, and reduce pollutants close to their source.
- Policy PHS-5.4* Impervious surfaces such as driveways, streets, and parking lots shall be interspersed with vegetated areas that allow for infiltration of stormwater.
- Policy PHS-5.5* New developments shall minimize the land area covered with driveways, loading areas, and parking lots to reduce stormwater flows, reduce pollutants in urban runoff, recharge groundwater, and reduce flooding.
- Policy PHS-5.6* New developments shall use permeable surfaces for hardscape, where feasible.
- Policy PHS-5.7* Industrial land uses with high wastewater generation rates or effluent pollutant concentrations may be required by the Fairfield Suisun Sewer District to install equipment for pre-treatment of wastewater.
- Policy PHS-5.8* 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-5.9:* Septic systems are not allowed in new developments, which must connect to the regional sewer system for treatment of wastewater.

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### 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 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.

## Healthy Communities

Public safety and quality of life play a large role in the overall health of a community. Although there are goals and policies throughout the different elements of this General Plan that support community health and quality of life, the policies listed here provide additional guidance toward reaching this goal.

Healthy community principles can address a wide range of factors, including access to health care, healthy food, recreation, education, economic opportunity, disease management, and other factors. The City is committed to pursuing healthy community objectives in the context of its decision making and programs, in collaboration with many local and regional partners. It is anticipated that future collaboration would occur between City departments and health care providers, school districts, nonprofit foundations, and other public and private groups.

Increases in average temperature and changes in precipitation patterns due to climate change favor larger precipitation events that may facilitate the growth and activity of disease-carrying vectors. These can include ticks and mosquitoes carrying vector-borne diseases such as Lyme Disease and West Nile Virus, which have been recorded in the county in the past. Some of these diseases may cause only mild inconvenience, but others are potentially life threatening. Populations most vulnerable to human health hazards are those who spend a disproportionate amount of time outdoors, those with fragile immune systems or existing illnesses, those who may live in sub-standard housing or not have access to health insurance and medical care, and those without access to vehicles or internet. These persons may be living in conditions that increase their chances of catching vector-borne illnesses, lack the ability to fight off infections that may occur, or lack the financial resources to seek timely medical care. Increases in average temperature and changes in precipitation patterns due to climate change may facilitate the growth and activity of disease-carrying vectors. Overall, the risk of human health hazards is expected to increase.

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### **Goal PHS-6. Provide for improved health of Suisun City residents through healthy community design**

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**Objective PHS-6 Manage land use change, community design standards, and public facilities in a way that maintains or improves public health outcomes.**

*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 and for social gatherings and interaction.*

*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-6.4      The City will increase access to parks and recreation facilities and encourage the development of new parks in areas lacking sufficient facilities.*
- Policy PHS-6.5      As feasible, the City will increase access to health care and social services for residents of all ages.*
- Policy PHS-6.6      The City will promote the idea of complete neighborhoods, which provide a range of services and recreational opportunities that are supportive of healthy lifestyles within walking or biking distance of most homes.*

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## **Goal PHS-7    Encourage programs that promote healthy lifestyles**

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### **Objective PHS-7 Engage in proactive City health programs that maintain or improve Suisun City residents' health outcomes.**

- Policy PHS-7.1      The City should collaborate with area health providers and other stakeholders to provide targeted education regarding the importance of nutrition and exercise in a healthy lifestyle.*
- Policy PHS-7.2      The City should work closely with the Solano County Department of Health and Social Services to monitor health statistics for the City and county and develop action items and programs to address health deficiencies.*
- Policy PHS-7.3      The City should work closely with the Solano County Department of Health and Social Services to monitor emerging disease conditions for the City and county.*
- Policy PHS-7.4      Flood-management facilities shall be designed to reduce mosquito propagation by limiting the time period of standing water after a storm, by promoting circulation in water or fluctuating water levels, or through mosquito control methods, in communication with the Solano County Mosquito Abatement District.*
- Policy PHS-7.5      The City will work with the Agricultural Commissioner's Office to monitor pest conditions within the Sphere of Influence.*
- Policy PHS-7.6      The City will establish and maintain healthy community programs for residents, with a particular focus on seniors, children, and teens.*
- Policy PHS-7.7      The City will help low-income and other vulnerable community members connect with local affordable health services.*
- Policy PHS-7.8      The City will identify opportunities to ensure that workers in outdoor industries have the training and resources to be adequately protected from environmental hazards, including extreme heat, poor air quality, pests, and diseases.*



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## Goal PHS-8 Promote access to healthy food and nutrition

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### Objective PHS-8 Improve access to healthy and nutritious food.

- 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 PHS-8.2 The City will encourage the location of grocery stores, retailers that offer healthy food choices, and healthy restaurants in areas currently lacking access to such facilities.*
- Policy PHS-8.3 The City should coordinate with the school district and other local agencies to incorporate local agricultural products into government food programs.*
- Policy PHS-8.4 The City will support the establishment of community gardens, farm stands, and farmer's markets, as shown in Exhibit 9-3.*



**Exhibit 9-3**

**Community Garden**

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## Goal PHS-9 Promote economic health and opportunity to contribute to public health and happiness

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### Objective PHS-9 Increase local opportunities that both improve public health and the local economy.

- Policy PHS-9.1 The City will implement the goals and policies of the Economic Development Element to increase the economic health of the City, recognizing that economic health and opportunity provide jobs and contribute to the overall happiness of the community.*

*Policy PHS-9.2      The City will encourage the development of a highly skilled local employment base by promoting local job training programs to provide vocational education to the local workforce.*

*Policy PHS-9.3      The City will support local businesses, as they contribute to the local economy and civic pride, and provide income for City residents.*

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**Program PHS-9.1      Vector Control**

The City will coordinate with the County's vector control program and Mosquito Abatement District to monitor and respond to hazards presented by pests and disease vectors.

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**Program PHS-9.2      Health Education Programs Outreach**

Work with the Solano County Department of Health and Social Services and healthcare providers to provide outreach and education programs about human health hazards to Suisun City residents and workers.

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**Program PHS-9.3      Transportation Coordination Program**

Coordinate with local transit providers to establish programming and services to help those without vehicle access or with limited mobility reach medical centers.

## Safety

The safety goals and policies of this Element are focused on preventing and responding to potentially hazardous conditions and situations. These goals and policies differ from public health goals and policies in that they describe the potential for hazards and protecting people and infrastructure from these hazards.

## Hazards and Hazardous Materials

Hazardous materials are substances that can be dangerous to the public's health and safety if they are improperly used, stored, transported, or disposed.

The most significant concerns regarding possible hazardous materials releases in Suisun City are the presence of truck traffic on SR 12, rail traffic on the UPRR main line, and four major pipelines that cross the City and are in bordering areas. A wide range of hazardous cargoes are regularly transported along these routes.

Types of hazardous materials regularly transported by highway and railroad include flammable liquids, corrosive materials, compressed and/or poisonous gases, explosives, flammable solids, and irritating materials. Underground pipelines transporting hazardous materials include two Pacific Gas and Electric Company (PG&E) high-pressure natural gas lines along SR 12, Kinder-Morgan pipelines along the right-of-way of the UPRR carrying refined petroleum products, and Department of Defense jet fuel lines going to Travis AFB along SR 12.

There are also hazardous material sites that are scheduled for investigation, remediation, are under remediation, or that have completed remediation throughout the City.





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, a pipeline failed and released diesel fuel in Suisun Marsh in 2004, another leak occurred from a pipeline parallel to the UPRR just northeast of the City limits in 2009, and in 2021 a diesel fuel leak affected the backwater area of Suisun City.

Travis AFB is directly adjacent to the City's SOI and is listed as a United States Environmental Protection Agency (EPA) Superfund site. Travis AFB is also a permitted hazardous waste facility that handles PCB-contaminated waste and PCB-containing equipment, such as electrical transformers.

Climate change is unlikely to substantially affect hazardous materials transportation incidents. However, increased frequency and intensity of hazards, such as floods and severe weather, may create a greater risk of hazardous materials releases during and after these events.

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## **Goal PHS-10 Reduce Potential Human Injury or Property Damage During the Manufacture, Storage, or Transportation of Hazardous Substances.**

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### **Objective PHS-10 Avoid and minimize health risk associated with hazardous materials.**

- 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 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-10.3      The City will prohibit the transportation of hazardous materials in quantities greater than those used in routine household maintenance through residential areas.*
- Policy PHS-10.4      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 in a proper manner.*
- Policy PHS-10.5      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 Air Force Base accident potential zones.*
- Policy PHS-10.6      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 the Suisun Marsh. Policy PHS-10.7      The City will prohibit the development of hazardous materials and waste facilities within areas identified at risk of sea level rise and flooding as shown in Exhibit 9-6.*

- Policy PHS-10.8      The City will prohibit new hazardous materials facilities within one-quarter mile of schools or residential areas.*
- Policy PHS-10.9      The City will require all businesses to comply with state requirements for Hazardous Materials Business Plans (HMBP) under the California Environmental Protection Agency HMBP Program.*
- Policy PHS-10.10     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.*
- Policy PHS-10.11     The City will provide educational materials to local businesses and the general public about methods for safe handling and disposal of hazardous materials and techniques for reducing their own hazardous materials use.*
- Policy PHS-10.12     The City will continue to participate in the Solano County Hazardous Materials Response Team and provide initial and ongoing training for first responders, such as training in hazardous materials incident response and management.*

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**Program PHS-10.1    Hazardous Materials Business Plans**

Businesses shall submit their Hazardous Materials Business Plans (HMBPs) 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.

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**Program PHS-10.2    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 Yolo-Solano 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.

## **Flooding**

Flooding is the rising and overflowing of a body of water onto normally dry land. Areas at an elevated risk of flooding are generally divided into 100- and 500-year flood zones. A 100-year flood zone has a 1-percent chance of experiencing a major flood in any given year and a 500-year flood zone has a 0.2-percent chance of flooding in any given year.



The potential for flooding is a major hazard in Suisun City, as portions of the City and its SOI are within the Federal Emergency Management Agency (FEMA) designated 500-year and 100-year flood zones, as depicted in Exhibit 9-4. As shown, this includes most of the Downtown Waterfront Area and several developed areas south of SR 12, particularly in the vicinity of Sunset Avenue adjacent to Suisun Marsh. Flooding can also occur along the City's waterways. Areas of shallow flooding frequently occur along Sunset Avenue and SR 12 due to sheet-flow and ponding from Laurel Creek, between SR 12 and the UPRR from Laurel Creek, and at Cordelia Road due to ponding from Pennsylvania Avenue Creek flooding. Flooding along Pennsylvania Avenue Creek, within Suisun City, is caused by backwater from Suisun Slough. These major flooding events in the City occurred in 1940, 1950, 1955, 1963, 1966, 1967, 1969, 1970, and 1973.

Several populations and assets face high risks from flooding events. These populations may face outside risk of flood exposure, may be especially vulnerable to the health effects and financial repercussions of flood damage, or may encounter barriers to evacuating during flood events. These include those living in flood-prone areas who lack the financial resources to protect their homes or are ineligible for grant funding to recover from flood damage to their homes; persons with limited mobility; outdoor workers; pollution-burdened populations that may be exposed to pollutant mobilization due to flooding; and persons living on single-access roads.

Significant pieces of critical infrastructure in Suisun City could be blocked, damaged, or rendered inoperable by floodwaters. Flooding can damage or interrupt the operation of transportation infrastructure, including major roads, the UPRR, and electrical vehicle charging stations. Floodwaters can inundate water and wastewater infrastructure, potentially resulting in the release of wastewater and contamination of drinking water and overwhelm existing flood control infrastructure. Parks and recreation facilities, homes, government and public safety buildings, and the Downtown Waterfront Area all fall within flood hazard areas and could be damaged by floodwaters; operations at government buildings may be interrupted and homes could be rendered uninhabitable. Flooding damage to any of these community assets could have profound effects on utilities, essential services, economic activity, and public health and safety.

Climate change is expected to make flood events worse, as scientists expect that climate change will cause more frequent and intense precipitation events, which could lead to more severe flooding. Because of this, floods are expected to occur more often in Suisun City and climate change may expand the parts of the City that are considered prone to flooding.

## **Sea Level Rise and Shoreline Flooding**

Sea level rise is an increase in the ocean's surface height relative to the land in a particular location. Sea level rise is a gradual process, taking place over years or decades. Sea level rise, a direct result of climate change, affects shoreline communities as well as those along the San Francisco Bay and into the Sacramento-San Joaquin Delta region. It has the potential to inundate homes, businesses, and infrastructure near the shorelines, as well as cause erosion of shoreline lands over time. Sea levels rose an average of 2.0 millimeters (mm) per year since the late nineteenth century, and projections suggest that it will rise at a higher rate during the twenty-first century. Rising seas increase the risk of shoreline flooding, storm surge inundation, shoreline erosion, and wetland loss. The cities and infrastructure that line many shorelines are already vulnerable to damage from storms, which will likely increase as the sea level continues to rise and inundate areas further inland. While not widely reported historically, sea level rise may increase the risk of saltwater intrusion from the Sacramento-San Joaquin River Delta into the Suisun Marsh Solano Subbasin, which would have negative impacts on water quality. However,

the Department of Water Resources maintains three salinity control gate facilities that help reduce saltwater intrusion into the Suisun Marsh.

Along the Suisun City shoreline, sea levels are projected to rise approximately 24 inches by 2050 and 84 inches by 2100. However, it is possible that sea levels could rise faster than these projections. Sea level rise projections for the years 2050 and 2100 in Suisun City are shown in Exhibits 9-5 and 9-6, respectively. Parts of the City immediately adjacent to McCoy Creek are projected to experience sea level rise of up to approximately two to four feet by 2050. By 2100, the area immediately adjacent to McCoy Creek may experience sea level rise of up to 12 feet, the southern edges of the City may experience sea level rise of up to four feet. Most shoreline damage from flooding would occur as a result of storm activity in combination with higher sea levels.

Suisun City is also vulnerable to shoreline flooding due to its proximity to the Sacramento-San Joaquin Delta. Shoreline flooding is caused by processes such as waves, tides, storm surge, or heavy rainfall from storms and can be exacerbated by sea level rise. The severity and exact location of shoreline flooding depends on several factors and can be exacerbated by inland flooding. However, Exhibit 9-7 illustrates the parts of the City that would be impacted by shoreline flooding by 2050, with 24 inches of sea level rise and a five-year storm, and Exhibit 9-8 shows shoreline flooding by 2100, with 84 inches of sea level rise and a five-year storm. By 2100, much of the southern half of the City would be inundated by floodwaters of up to two feet.

## **Dam Failure**

A dam failure is an uncontrolled release of water from a reservoir through a dam because of structural failures or deficiencies in the dam, usually associated with intense rainfall or prolonged flooding. Dam failures can range from minor to catastrophic and can potentially harm human life and property downstream from the failure. Although dam failures are very rare, these events are not unprecedented. There are several jurisdictional dams in Solano County and Napa County near Suisun City. The inundation zone of Lake Curry in Napa County can reach Suisun City, as shown in Exhibit 9-9.

## **Flood Protection**

Suisun City relies on local levee systems for flood protection. The levee systems in some Solano County marshlands were originally constructed by hand labor and later by dredging to hold back river floods and daily tides, to create additional land for grazing and growing crops. Today, these levees remain as embankments of five to six feet in height, with foundation widths of roughly 20 to 30 feet. Levees run both north to south and east to west across the marshland immediately south of the City and following the path of Suisun Slough.

Constant maintenance is required to hold these levees against the high tides and river floods. Some of these levees are not maintained to specific standards, leaving them vulnerable to failure and inundation. Levee instability is the cause of many floods. There are 27 Delta islands that have been partially or completely flooded since 1980, and 150 failures occurred over the course of the twentieth century. In mid-January 1980, severe rainstorms over central California caused high river outflow through the Sacramento-San Joaquin Delta, which, coinciding with gale force and high tides, resulted in levee failure and flooding to approximately 9,600 acres. Even inspected levees are prone to failure under certain conditions, such as the Jones Tract (approximately nine miles of Stockton), which failed in 2004 after inspection.



The Delta-Suisun Marsh Office, part of the California Department of Water Resources, is responsible for improving flood protection within the Sacramento-San Joaquin Delta and portions of the Suisun Marsh. This is a grant-funded program that works with more than 60 reclamation districts in the Sacramento-San Joaquin Delta and Suisun Marsh to maintain and improve the flood-control system and provide protection to public and private investments in the Sacramento-San Joaquin Delta. Through its two major components (Delta Levees Maintenance Subventions Program and Delta Levees Special Flood Control Projects), the grant program works with the local agencies to maintain, plan, and complete levee rehabilitation projects.

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## **Goal PHS-11 Minimize the loss of life and damage to property caused by flood events.**

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**Objective PHS-11 Manage land use change and plan for flood protection in a way that is consistent with applicable federal and state guidelines.**

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|------------------------|--|
| <i>Policy PHS-11.1</i> | <i>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 capable of protecting existing and proposed structures from flooding, in accordance with state law.</i>                                |
| <i>Policy PHS-11.2</i> | <i>The City will coordinate with federal, state, and local agencies to maintain and improve the capacity of local and regional flood-control systems, promoting a regional approach to addressing flood and sea level rise hazards.</i>  |
| <i>Policy PHS-11.3</i> | <i>The City will regularly reinforce and expand the City's stormwater drain systems to enhance the survivability of the system during heavy flood events.</i>  |
| <i>Policy PHS-11.4</i> | <i>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 well as sea level rise and shoreline flooding projections, as a basis for project review and to guide development in accordance with federal and state regulations.</i> |
| <i>Policy PHS-11.5</i> | <i>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.</i>   |
| <i>Policy PHS-11.6</i> | <i>The City will require evaluation of potential flood hazards before approving development projects.</i>  |
| <i>Policy PHS-11.7</i> | <i>The City will require new development to demonstrate that such development will not result in an increase to downstream flooding.</i>   |
| <i>Policy PHS-11.8</i> | <i>The City will prohibit development of new critical infrastructure in areas subject to inland flooding or 2100 shoreline flooding (as shown in Exhibits 9-4 through 9-9 unless no feasible alternative exists.</i>   |



- Policy PHS-11.9      The City will require that existing and new critical facilities and 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 and may include:*
- Anchoring to prevent flotation, collapse, or lateral movement.*
  - Using flood-resistant construction materials.*
  - Employing construction methods and practices that minimize flood damage.*
  - Elevating building pads, habitable building floors, and key building systems (e.g., HVAC machinery, power systems, etc.) above the base flood elevation plus required freeboard.*
  - Providing adequate venting to allow for equalization of hydrostatic flood forces.*
- Policy PHS-11.10      The City will regularly reinforce local ramps, bridges, and roads against flooding through protection activities, including elevating road(s) and installing culverts beneath roads or building a higher bridge across areas that experiences regular flooding.*
- Policy PHS-11.11      The City will require critical facilities, including those providing emergency response and public health services, to expand operations and contingency plans to ensure they are protected from both inland and shoreline flooding and have water, power, food, and other supplies necessary to maintain key functions during a flood event.*
- Policy PHS-11.12      The City will use the City of Suisun City Annex of the Solano County Multi-jurisdiction Hazard Mitigation Plan and will coordinate with the Solano County Water Agency and Solano County Reclamation and Levee Districts to develop adaptation strategies associated with the impacts of sea level rise.*
- Policy PHS-11.13      The City will foster, facilitate, and coordinate partnerships with Solano County, agencies, utilities, property owners, and neighborhood groups/organizations on planning for and implementing inland flooding mitigation and sea level rise adaptation projects.*
- Policy PHS-11.14      The City will work collaboratively with surrounding jurisdictions to seek funding, design, and implement sea level rise resiliency projects.*
- Policy PHS-11.15      The City will support Solano County's Sea Level Rise Strategic Program, as feasible.*
- Policy PHS-11.16      The City will ensure that regional shoreline park planning and project development activities consider sea level rise projections (as shown in Exhibits 9-5 and 9-6) and factor impacts into tidal wetland restoration, habitat enhancement or creation, and park and recreation management activities.*



- Policy PHS-11.17      The City will support the implementation of the Suisun Marsh Habitat Management, Preservation, and Restoration Plan to improve and restore wetland habitats and ensure that these habitats protect the built environment.*
- Policy PHS-11.18      The City will prioritize funding to improve vulnerable public transportation assets in shoreline flooding areas that serve transit-dependent populations and prioritize development of alternative transit options to serve these populations.*
- Policy PHS-11.19      The City will establish educational programs to raise public awareness about inland and shoreline flooding, sea level rise, and flood risks.*
- Policy PHS-11.20      The City will expand communication campaigns to increase public awareness and capacity to participate in local and regional sea level rise decision-making, with a focus on basic understanding of concepts, consequences, relationship to other critical issues such as jobs and housing, and how to get involved with local, regional, and state governance.*
- Policy PHS-11.21      The City will ensure the Suisun City Marina facilities and Suisun Channel allow access for emergency services.*

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#### **Program PHS-11.1      Flood Protection Plan**

The City will collaborate with the Solano County Water Agency to implement and regularly update the Flood Control Master Plan.

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#### **Program PHS-11.2      Floodplain Review**

The City will regularly review all areas subject to flooding, as identified by the Federal Emergency Management Agency or Department of Water Resources 100-year floodplains, will make any changes identified through this review available to the public, and will consult the most recently available flood mapping data during the development review process.

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#### **Program PHS-11.3      Development Review Checklist**

The City will develop a checklist to consult during development review to aid potential applicants in determining flood risk. This checklist will provide the following information:

- A site's location within the inland flood hazard, sea level rise, and shoreline flooding projection zones.
- Information about local ratio of pervious to impervious surfaces.
- Confirmation of stormwater drainage capacity.
- Elevation of key building systems and habitable areas.

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#### **Program PHS-11.4      Building Codes and Design Guidelines**

The City will update building codes and design guidelines to support improvements to existing structures that consider sea level rise and shoreline flooding. Updates could consider floodproofing, flood-

resistant building materials, floodable designs, and freeboard/elevation requirements.

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**Program PHS-11.5 Floodplain Management Ordinance**

The City will review and assess the feasibility of an update to the local Floodplain Management Ordinance that goes beyond existing National Flood Insurance Program (NFIP) regulations. Consider adding additional elevation to the current base flood elevation (BFE) requirement and lowering Suisun City's Community Rating System (CRS) designation.

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**Program PHS-11.6 Sea Level Rise Overlay Zone**

The City will adopt a Sea Level Rise overlay zone in the City's Zoning Code incorporating the sea level rise and shoreline flooding projections for 2050 and 2100. The "overlay zone" shall include land use regulations for site planning and a minimum construction elevation that reflects flooding and sea level rise data.

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**Program PHS-11.7 Conservation Easements**

The City will establish conservation easements that preserve certain high hazard areas as nondevelopment areas that can be maintained as open space or habitat, and/or low-density development areas to discourage and prohibit new development or densification in high hazard areas.

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**Program PHS-11.8 Flood Insurance**

The City will explore the benefits of participating in the Community Rating System (CRS) to maintain and reduce flood insurance rates under the National Flood Insurance Program.

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**Program PHS-11.9 Storm Drain Maintenance**

The City will regularly clean and maintain storm drains and will address potential ponding and improvement needs along key roadways in communities and neighborhoods subject to flooding due to poor drainage, especially in advance of the rainy season.

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**Program PHS-11.10 Levee Maintenance**

The City will explore opportunities to support levee owners and managers with obtaining funding to improve the resilience of levees and ensure they can withstand rising sea levels and 100-year storm events.

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**Program PHS-11.11 Marina Facilities**

The City will improve City-owned and operated marina and shoreline facilities to withstand king tide events and sea level rise.

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**Program PHS-11.12 Countywide Adaptation Planning**

The City will work with Solano County to facilitate the formation of a centralized countywide agency or joint powers authority to facilitate



adaptation planning, adaptation project development and financing, and implementation.

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### **Program PHS-11.13   Regional Sea Level Rise Adaptation Plan**

The City will collaborate with all Solano County jurisdictions, including the participating agencies in the Solano Bayshore Resiliency Project, to develop a countywide Sea Level Rise Adaptation Plan. The adaptation plan shall include the following components:

- Sea Level Rise Projection Map, to be used as the basis for adaptation planning.
- Coordination with local, regional, state, and federal agencies with Delta and Bay shoreline oversight, major property owners, and owners of critical infrastructure and facilities in the preparation of the adaptation plan.
- An equitable, community-driven outreach and engagement plan for all community stakeholders with focused engagement of residents, business owners, and property owners within the vulnerable areas.
- An inventory of potential areas and sites suitable for mid- to large-scale adaptation projects.
- A menu of adaptation measures and approaches that could include, but not be limited to:
  - Re-purposing of land for wetland and habitat migration, especially on low-lying, undeveloped, and underdeveloped sites; in areas that are permanent open space; and in areas that are environmentally constrained. Transfer of development rights from such areas should be encouraged.
  - Innovative shoreline protection and nature-based adaptation measures such as wetlands and habitat restoration, and horizontal levees where most practical and feasible.
  - Channel realignment and widening.
  - Hard line armoring measures (sea walls, levees, breakwater, locks, etc.) in densely developed areas to minimize the potential for displacement of permanent residents and businesses.
  - Elevating areas, structures, and infrastructure to reduce risks.
- The appropriate timing and “phasing” of adaptation planning and implementation, in accordance with the Adaptation Pathways Model.
- Potential financing tools and opportunities.
- Coordination or incorporation into the Solano County Multi-Jurisdictional Hazard Mitigation Plan.

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**Program PHS-11.14 Collaboration with Neighboring Jurisdictions**

The City will participate in groups supporting regional sea level rise coordination, including Bay Conservation and Development Commission (BCDC) Regional Working Groups, Bay Area Climate Adaptation Network, and San Francisco Bay Regional Coastal Hazards Adaptation Resiliency Group.

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**Program PHS-11.15 Protection Priorities for Vulnerable Communities**

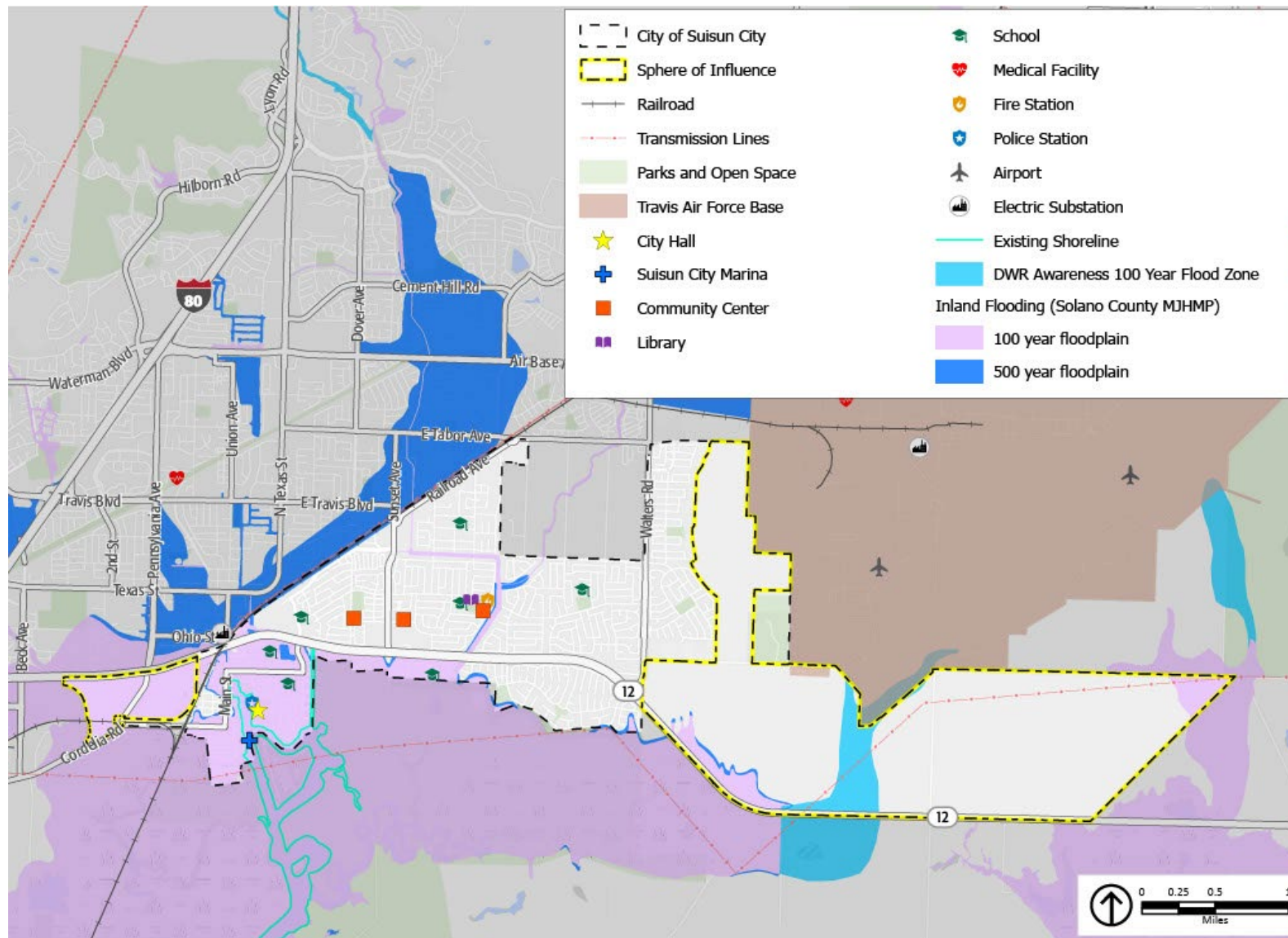
The City will establish city-wide protection priorities for vulnerable communities and populations identified to be at high risk of displacement from future flooding and sea level rise in the Vulnerability Assessment and use regional funding mechanisms to plan and implement protection measures in these locations.

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**Program PHS-11.16 Maintenance of the Suisun City Marina facilities and Suisun Channel**

The City will seek funding to maintain the Suisun City Marina facilities and Suisun Channel, including needed dredging within the existing channel without harming the Suisun Marsh.



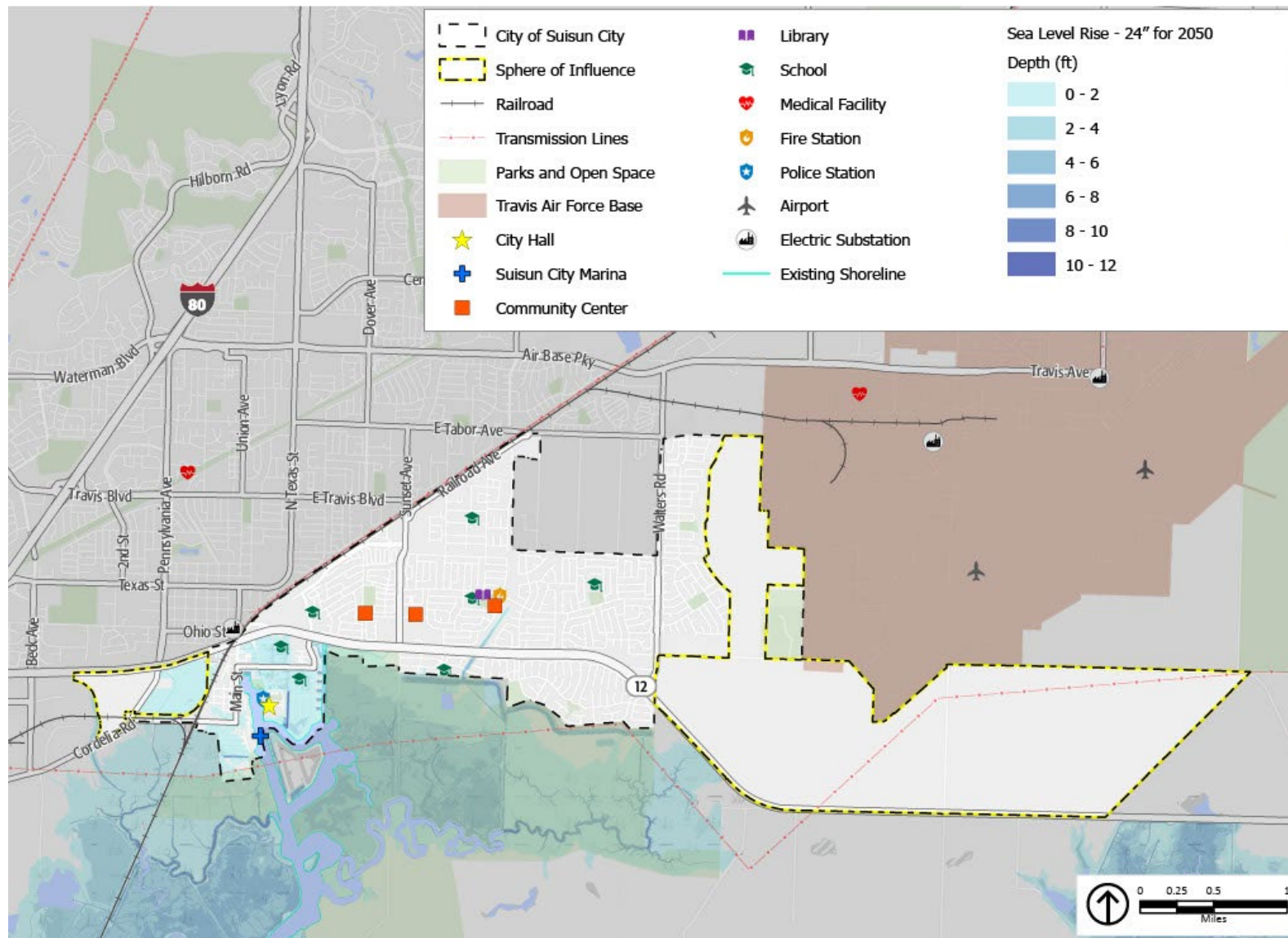


Source: DWR 2021, Solano County 2021, Solano LAFCO 2020, USDOT BTS 2021, PlaceWorks 2022, ESRI

Exhibit 9-4

Flood Hazard Areas





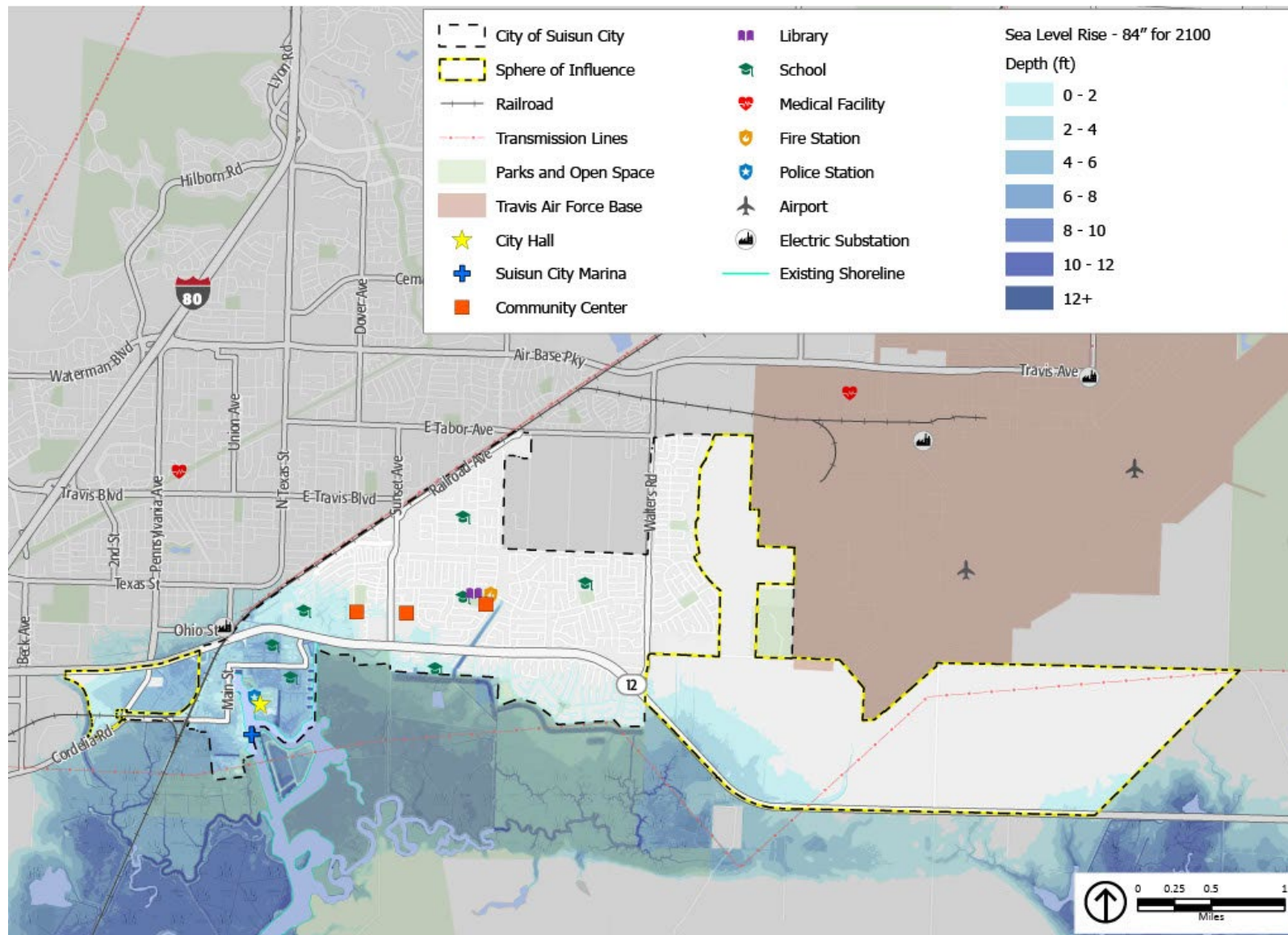
Source: Adapting to Rising Tides 2020, PlaceWorks 2022, ESRI

Exhibit 9-5

Sea Level Rise Hazard Areas, 2050







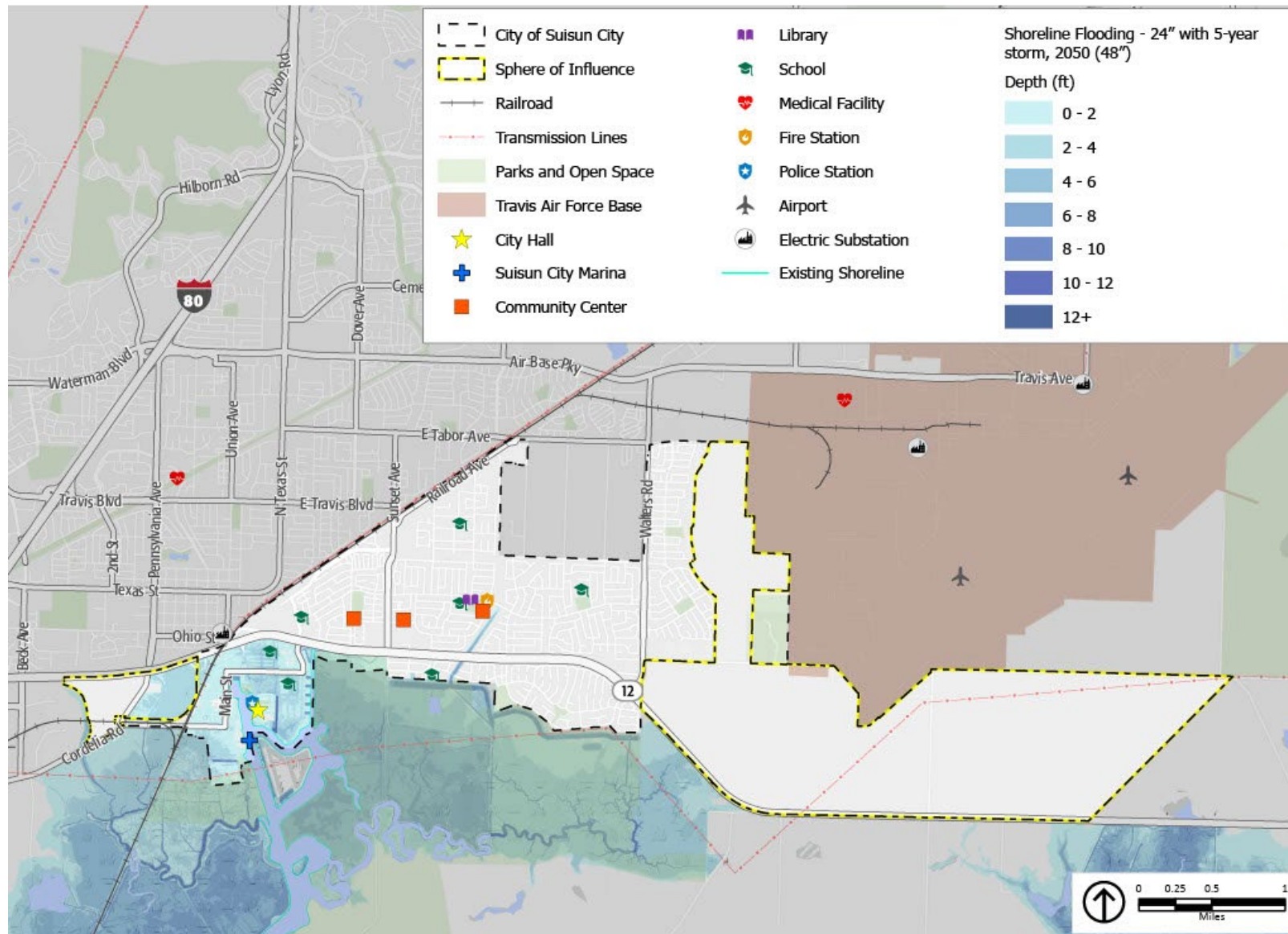
Source: Adapting to Rising Tides 2020, PlaceWorks 2022, ESRI

**Exhibit 9-6**

**Sea Level Rise Hazard Areas, 2100**





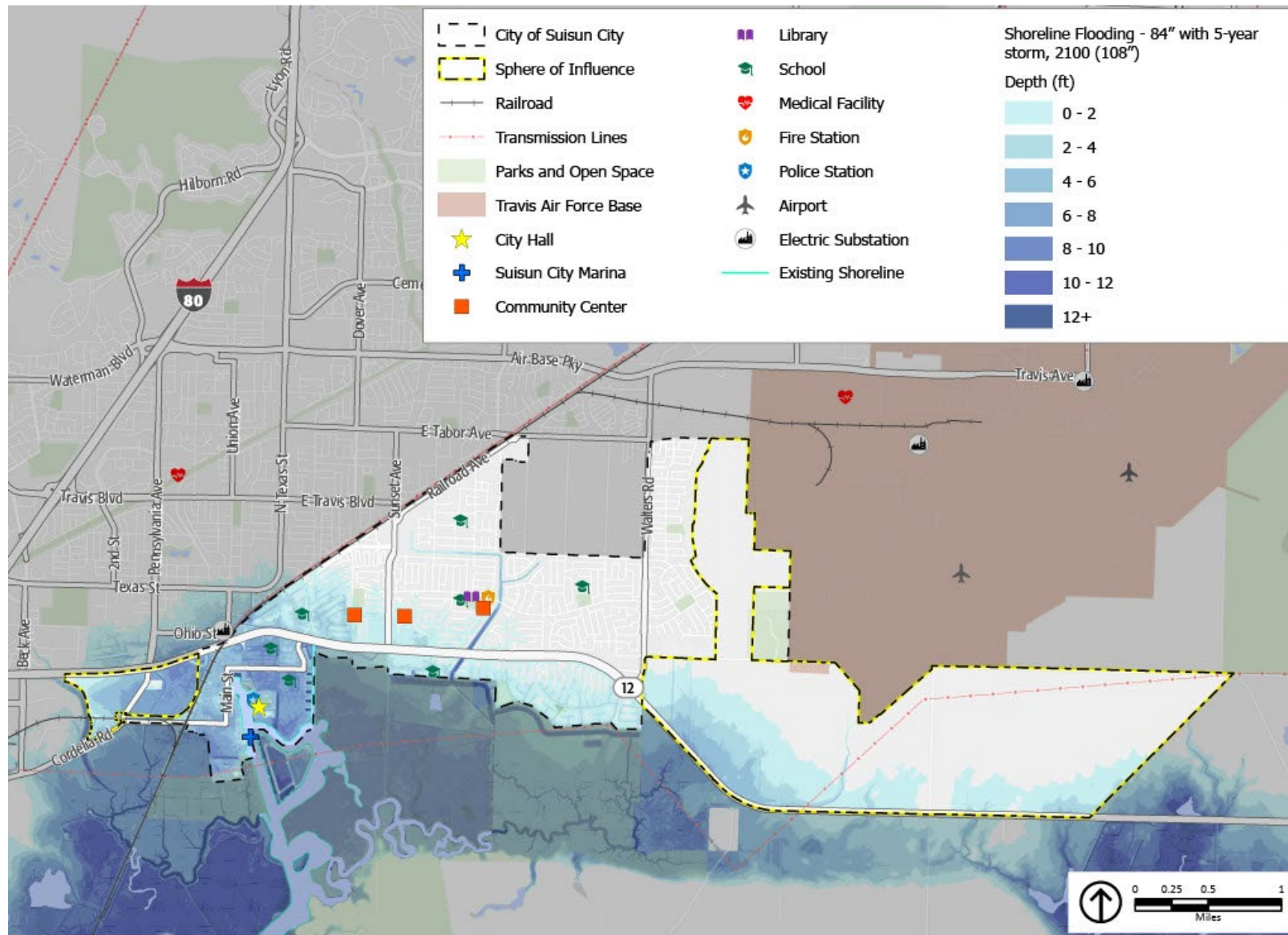


Source: Adapting to Rising Tides 2020, PlaceWorks 2022, ESRI

**Exhibit 9-7**

**Sea level Rise with a 5-Year Storm, 2050**





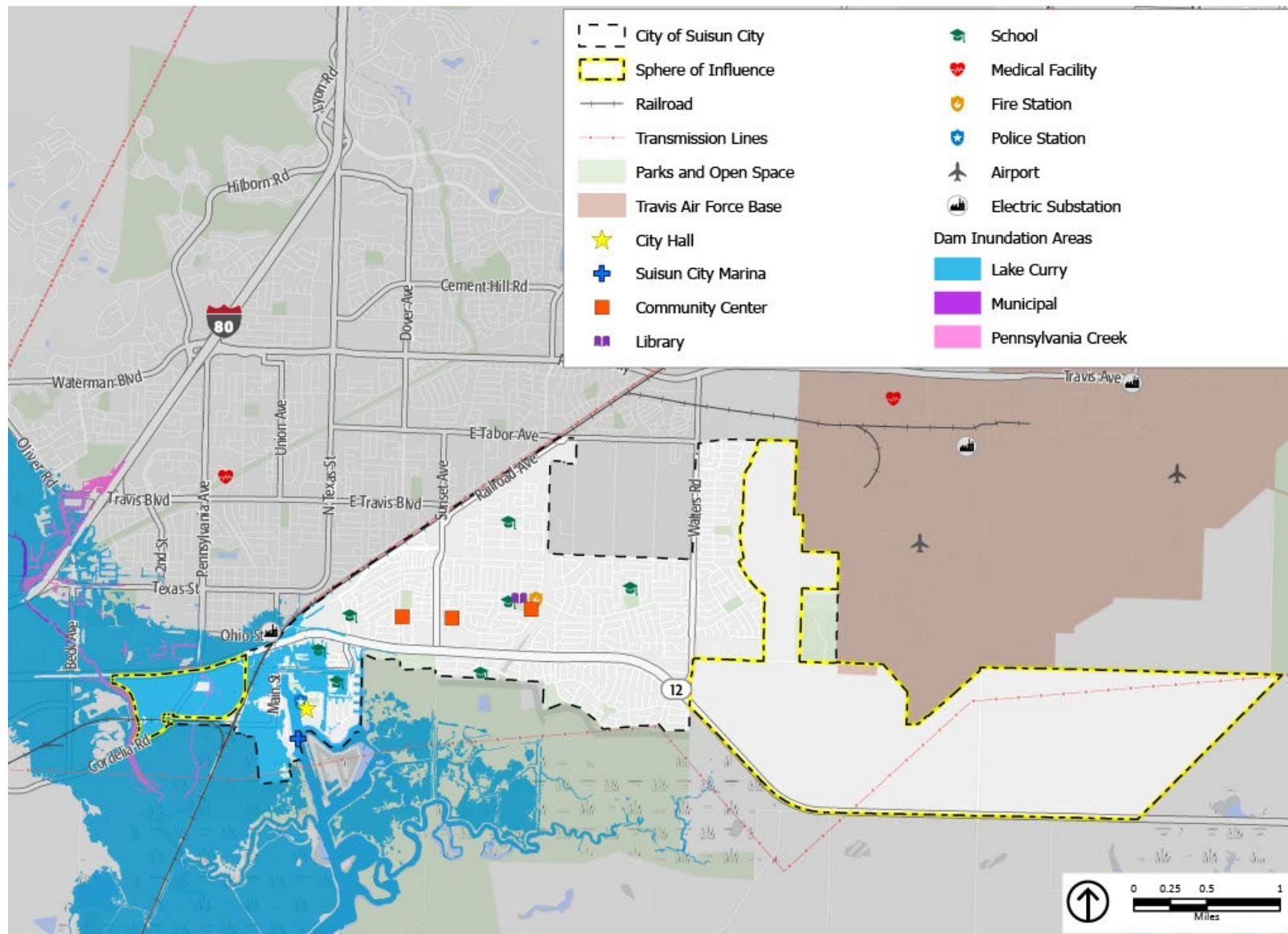
Source: Adapting to Rising Tides 2020, PlaceWorks 2022, ESRI

**Exhibit 9-8**

**Sea level Rise with a 5-Year Storm, 2100**







Source: DWR DSOD 2021, USDOT BTS 2021, Solano LAFCO 2020, PlaceWorks 2022, ESRI

**Exhibit 9-9**

**Dam Inundation Areas**





## Fire Risk

Vegetation, wind, temperature, humidity, and slope are all factors that affect how wildfires spread. The worst wildfire hazards occur where easily ignitable grass is growing with brush. Open space areas and grasslands, particularly those adjacent to urban development, can pose major risks for wildfires. Areas within the City's SOI are characterized as low to moderate fire risk. However, according to draft fire risk maps from the California Department of Forestry and Fire Protection (CALFIRE), there are areas of moderate fire risk in the western part of the SOI and just east of Sunset Avenue and south of SR 12 (see Exhibit 9-10).

The wildland-urban interface (WUI) is an area where buildings and infrastructure (e.g., cell towers, schools, water supply facilities) mix with areas of flammable wildland vegetation. The WUI is made up of three distinct zones. The intermix zone contains housing development or improved parcels interspersed in an area dominated by wildland vegetation subject to wildfire. The interface zone contains dense housing next to vegetation, but not dominated by wildland vegetation, that can burn in a wildfire. The influence zone contains wildfire-susceptible vegetation within 1.5 miles from the WUI or wildland-urban intermix zones. WUI areas in and around Suisun City are shown in Exhibit 9-11. These areas occur predominately along the eastern border of the City in close proximity to existing residential land uses. In the WUI, efforts to prevent ignitions and limit wildfire loss hinge on hardening structures and creating defensible space through a multi-faceted approach, which includes engineering, enforcement, education, emergency response, and economic incentive. Different strategies in the defense and threat zones of the WUI help to limit the spread of fire and reduce the risk to people and property.

Fire risks are not solely contained to wildfires. Older structures oftentimes are not constructed to meet current fire codes, so may pose an additional risk. Many of these structures may have inadequate electrical and heating systems. Approximately 30 percent of Suisun City's housing stock was constructed prior to 1980 and may therefore be particularly vulnerable to structural fires.

Several moderate and large-scale fires have affected Suisun City in recent years. The more severe of these fires were generally fueled or exacerbated by strong winds and high temperatures and resulted in damage to homes and commercial buildings, evacuations, and road closures, including closure of portions of SR 12.

The Suisun City Fire Department provides fire protection for Suisun City. The Fire Department provides 24/7 fire protection and emergency services, including fire suppression, medical response, and natural and human-caused disaster preparedness. The Fire Department also responds to public assistance calls, provides public education programs for schools within the City, and manages the nuisance weed abatement program.

Over half of the populations evaluated in the Vulnerability Assessment are highly or severely vulnerable to wildfire and wildfire smoke. Those who are most vulnerable include persons who may be unable to reduce their exposure to wildfire smoke and those who may be unable to seek timely medical care in the event of wildfire smoke exposure. These populations include those with limited mobility or who lack access to reliable transportation, those living in less resilient housing, those who spend a disproportionate amount of time outdoors, and pollution-burdened populations.

Given the complex relationships between climate, vegetation, hydrology, and human behavior that contribute to fire risk, fire severity can fluctuate from year to year. However, changing climate conditions are expected to increase the fire risk in and around Solano County. Warmer temperatures brought on by climate change can exacerbate drought conditions. Droughts can kill or dry out plants, creating more fuel for wildfires. Increased winds may result in more erratic fire behavior, making fires harder to contain. Warmer temperatures are also expected to occur later in the year, extending the wildfire season, which is likely to begin earlier in the year and extend later than it has historically. Therefore, even in years in which wildfire does not occur within Suisun City, the city may still be affected by the public health impacts of wildfire smoke from wildfires occurring throughout the region.

---

## **Goal PHS-12 Reduce Potential Human Injury or Property Damage from Fires.**

---

### **Objective PHS-12 Manage land use change, building design, and site planning in a way that minimizes fire risk.**

- |                        |  |
|------------------------|--|
| <i>Policy PHS-12.1</i> | <i>The City will implement California Building Standards Code requirements for fire safety, as modified for historic structures and the rehabilitation of existing buildings.</i>  |
| <i>Policy PHS-12.2</i> | <i>The City will require that new development and redevelopment projects ensure adequate water flow for fire suppression as required by the Building Department.</i>   |
| <i>Policy PHS-12.3</i> | <i>The City will prohibit the construction of critical public facilities within mapped fire hazard or wildland-urban interface areas (as shown in Exhibits 9-10 and 9-11) to the greatest extent feasible.</i>                                     |
| <i>Policy PHS-12.4</i> | <i>The City will work with existing property owners within mapped wildland-urban interface areas to establish and maintain fire defensible space, vegetation clearance, emergency access roads, and firefighting infrastructure.</i>               |
| <i>Policy PHS-12.5</i> | <i>For older structures in Old Town constructed prior to 1980, limitations from inadequate fire wall construction and clearance around structures is to be considered during the revitalization and historic preservation of these structures.</i> |
| <i>Policy PHS-12.6</i> | <i>The City will provide public education to encourage owners of older buildings to retrofit structures to current safety standards, as specified in state building code requirements.</i>   |
| <i>Policy PHS-12.7</i> | <i>Suisun City will continue to be signatory to the Solano County Fire and Rescue Mutual Aid Agreement and the agreement for Local Government Fire and Emergency Assistance (California Fire Assistance Agreement).</i>                            |
| <i>Policy PHS-12.8</i> | <i>The City will require setbacks of new development adjacent to Suisun Marsh to provide defensible space and reduce potential for exposure to wildfires.</i>  |



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**Program PHS-12.1    Inventory of Potential High Fire Hazards**

The City will prepare and maintain a list of buildings and specific areas that could represent additional fire hazards, including vacant lots and those buildings 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.

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**Program PHS-12.2    Wildfire Mitigation Plan**

The City will develop a wildfire mitigation plan to identify specific projections the City may wish to undertake related to wildfire.

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**Program PHS-12.3    Air Quality Response**

The City will coordinate with Solano County Public Health to provide health resources to help residents respond to poor air quality events.

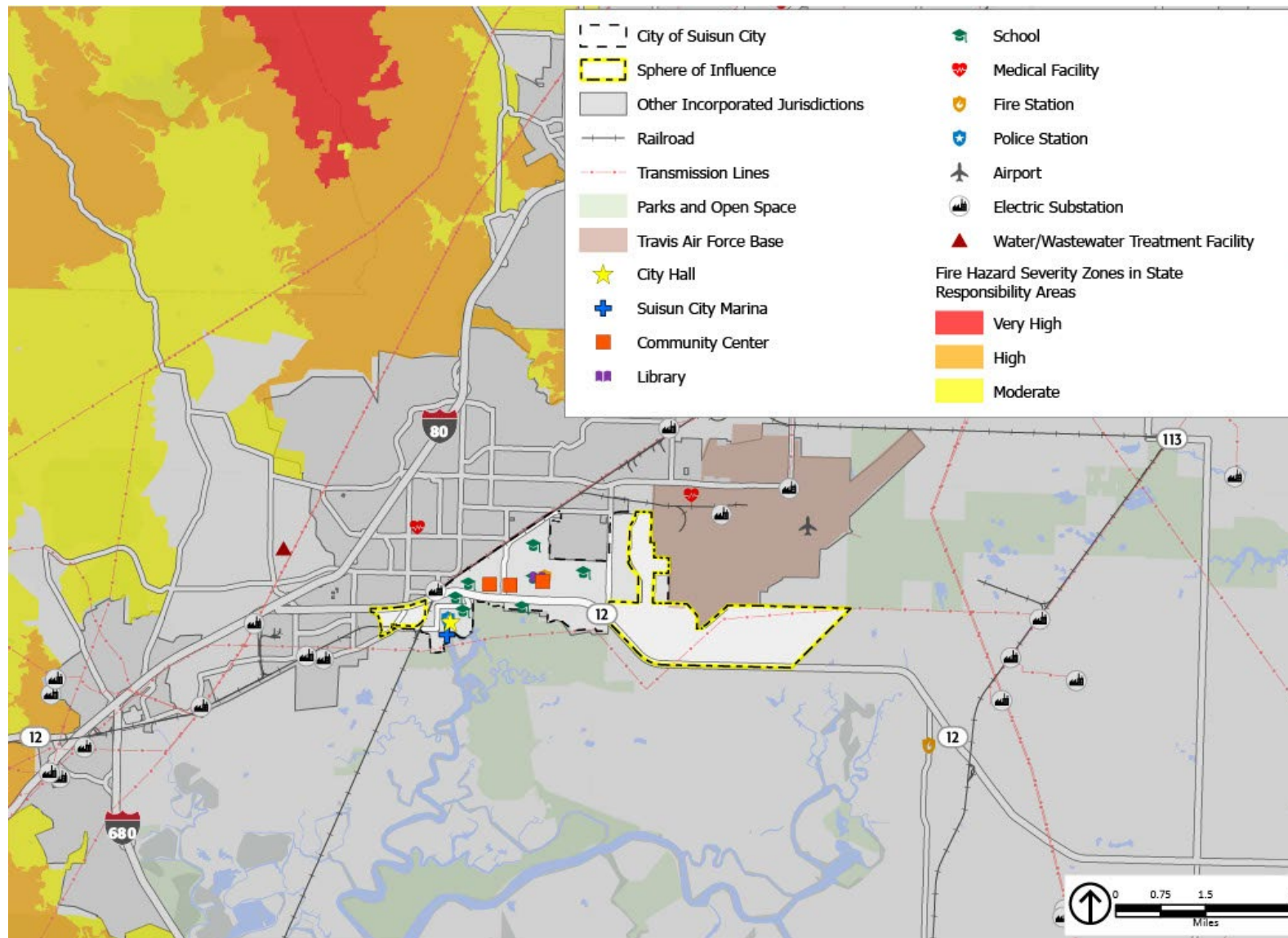
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**Program PHS-12.4    Improve Fire Resilience**

The City will develop an incentive program for property owners to retrofit their buildings to improve fire resilience.



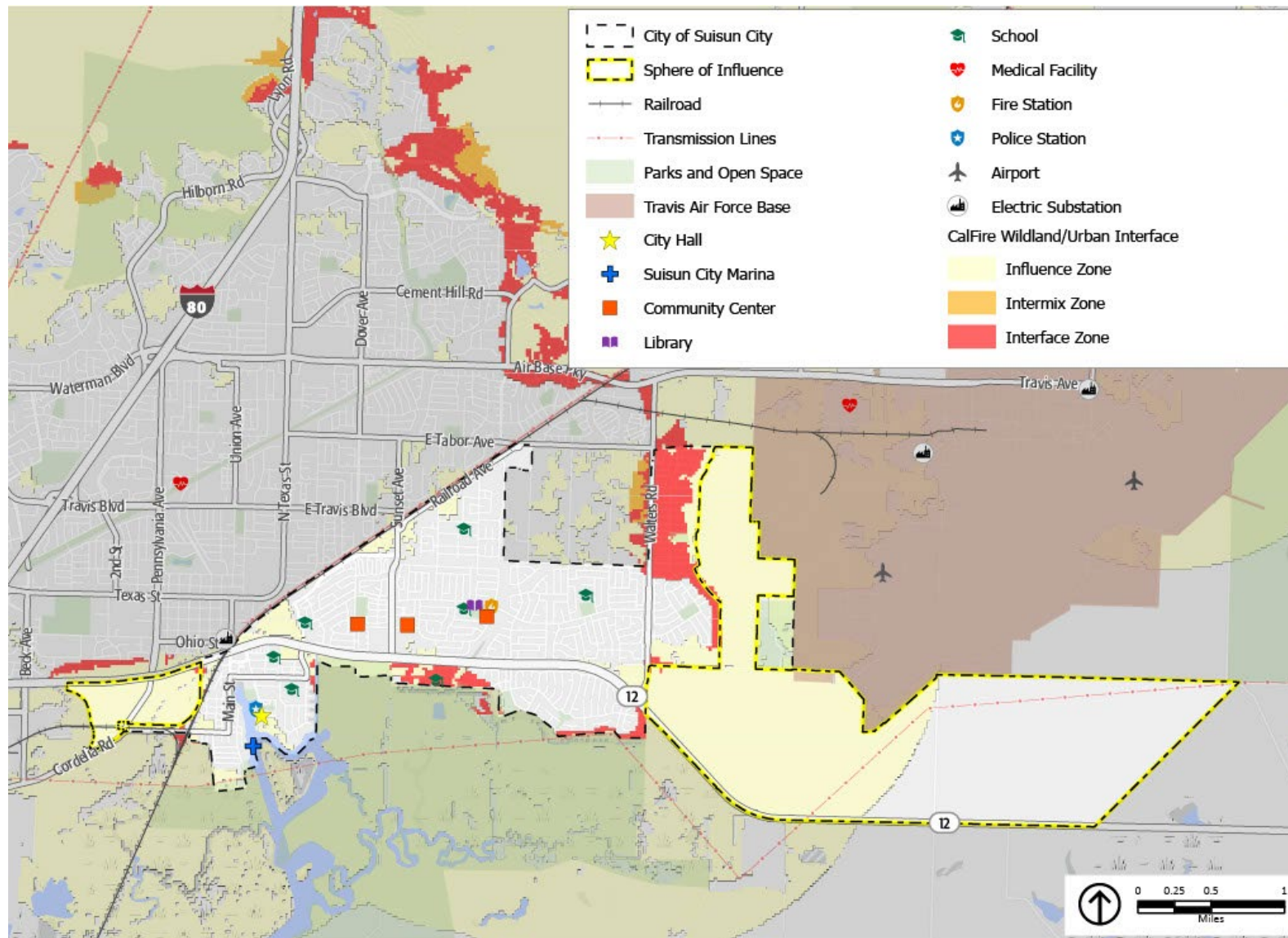
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Source: CalFire 2007, Solano County, Solano LAFCO 2020, USDOT BTS 2021, PlaceWorks 2022, ESRI

**Exhibit 9-10 Fire Hazard Severity Zones**





Source: CalFire 2015, Solano LAFCO 2020, USDOT BTS 2021, PlaceWorks 2022, ESRI

Exhibit 9-11

Wildland-Urban Interface







## Geologic and Seismic Hazards

Suisun City is susceptible to geologic, soil, and seismic hazards. The major geologic hazards are linked to seismic activity.

### Seismic Hazards

Solano County contains a number of faults within and outside the County that could potentially affect Suisun City. One fault, the Vaca-Kirby Hills Fault, runs through the City's SOI, trending north-south in the extreme eastern portion of the SOI. Recent geologic studies indicate that this is an active fault and therefore may pose a risk for surface rupture in the City.

Segments of the Green Valley Fault and the Cordelia Fault, approximately 3.5 and 3 miles west, respectively, are known to be active. Both faults have been zoned under the Alquist-Priolo Earthquake Fault Zone Act, meaning that development in the immediate vicinity of the fault trace must be preceded by detailed fault investigations. Because surface fault rupture is generally limited to a linear zone that is less than 50 feet wide, neither of these faults present any hazard from surface fault rupture in the City's SOI. However, strong ground shaking from a seismic event on these two faults, the Vaca-Kirby Hills Fault, or other active faults in the region could result in seismic hazards. There are no records of substantial earthquakes along the Rio Vista Fault system, and the Lagoon Valley Fault is considered inactive. The location of faults in the region are depicted in Exhibit 9-12.

Much of the City's SOI is an area of relatively high seismicity and will likely be subject to earthquake shaking in the future. Ground failure in the form of liquefaction, lurching, and settlement could result from earth shaking. Flood damage from earthquake-induced dam failure, as well as canal and levee damage could occur. Depending on the magnitude, proximity to epicenter, type of construction, and subsurface conditions (e.g., bedrock stability and the type and thickness of underlying soils), ground shaking damage could vary from slight to catastrophic. For example, the wet, unconsolidated soils of Suisun Marsh would have a high ground response and liquefaction potential, while surrounding areas of hard rock generally would experience lower intensities of shaking.

### Soil Hazards and Ground Failure

Shrink-swell potential is the relative change in volume to be expected with changes in moisture content. This is the extent to which the soil shrinks as it dries out or swells when it gets wet. Shrinking and swelling is influenced by the amount and kind of clay in the soil. Shrinking and swelling of soils causes damage to building foundations, roads, and other structures. These clays tend to swell despite the heavy loads imposed by large structures. Damage, such as cracking of foundations, results from differential movement and from the repetition of the shrink-swell cycle. In some cases, this problem may be avoided by removing the topsoil layer before placing a foundation.

A high shrink/swell potential indicates a hazard to maintenance of structures built in, on, or with material having this rating. As shown on Exhibit 9-7, most of the City's SOI is in areas with high shrink-swell potential. The area of Made Land just south of SR 12 and east of Suisun Slough have not yet been rated.

Ground failure includes liquefaction and the liquefaction-induced phenomena of lateral spreading and lurching. Liquefaction is a process by which sediments below the water table temporarily lose strength during an earthquake and behave as a viscous liquid

rather than a solid. Liquefaction can cause the soil beneath a structure to lose strength, which may result in the loss of foundation-bearing capacity. This loss of strength commonly causes the structure to settle or tip. Loss of bearing strength can also cause light buildings with basements, buried tanks, and foundation piles to rise buoyantly through the liquefied soil. Areas in Suisun City and the surrounding area with a high liquefaction potential are mapped in Exhibit 9-17.

Lateral spreading is lateral ground movement, with some vertical component, as a result of liquefaction. In effect, the soil rides on top of the liquefied layer outward from under buildings, roads, pipelines, transmission towers, railroad tracks, and other structures such as bridges. Damage is usually greatest to large or heavy structures on shallow foundations, and takes the form of cracking, tilting, and differential settlement.

## **Landslides**

Landslides and slope instability are characterized by the movement of soil and bedrock down slopes. This movement results from wet weather, seismic shaking, and/or improper construction, grading, and drainage. Areas of medium landslide risk are scattered throughout the City. The most prominent of these areas occur in the middle of the City, generally coinciding with McCoy Creek, and along the northern half of the eastern border of the City. Landslide hazard areas are shown in Exhibit 9-14.

Climate change may result in precipitation extremes (i.e., wetter rainfall periods and drier dry periods). While total average annual rainfall may not change significantly, rainfall may be concentrated in more intense precipitation events. Heavy rainfall could cause an increase in the number of landslides or make landslides larger than normal.

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## **Goal PHS-14 Reduce risks to people and property from geologic hazards and soils conditions.**

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### **Objective PHS-14 Avoid risks to property and life through the implementation of City policies, programs, and standards related to geologic and soils hazards.**

- |                        |  |
|------------------------|--|
| <i>Policy PHS-14.1</i> | <i>The City will implement state and local building code requirements, including those related to structural requirements and seismic safety criteria to reduce risks associated with seismic events and unstable and expansive soils.</i>   |
| <i>Policy PHS-14.2</i> | <i>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.</i> |
| <i>Policy PHS-14.3</i> | <i>The City will require new developments within seismic or geological hazard areas, as shown in Exhibits 9-12, 9-13, and 9-14, to include project features that minimize these risks.</i>   |
| <i>Policy PHS-14.4</i> | <i>The City will discourage the development of critical infrastructure within 50 feet of the Vaca-Kirby Hills Fault trace, Rio Vista Fault trace, or areas susceptible to landslide hazards.</i>   |



- Policy PHS-14.5      Critical facilities and buildings intended for human habitation shall be set back a minimum distance of 50 feet from the Vaca-Kirby Hills Fault trace, Rio Vista Fault trace, and landslide hazard areas.*
- Policy PHS-14.6      Require existing unreinforced masonry buildings to be seismically retrofitted, based on an engineering evaluation, if deemed unsafe by a building official.*
- Policy PHS-14.7      Assess critical and lifeline facilities for seismic safety and earthquake performance to ensure they remain operational after a seismic event.*

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**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.

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**Program PHS-14.2      Adopt an Unreinforced Masonry Ordinance**

The City will adopt and implement an Unreinforced Masonry Ordinance that requires all public facilities built with unreinforced masonry be retrofitted and brought up to code.

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**Program PHS-14.3      Fire Station Retrofit**

The City will retrofit or replace the un-reinforced masonry Fire Station.

---

**Program PHS-14.4      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, Rio Vista Fault trace, or landslide areas, 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.

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**Program PHS-14.5      Ensure Soil Stability**

The City will engage in soil erosion and slope stabilization activities in areas that have been subject to erosion or landslides.

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**Program PHS-14.6      Seismic and Geologic Hazards Education**

The City will provide education and training to Suisun City residents on earthquake preparation and safety.

## Climate Change Hazards

Climate change is projected to disrupt climate processes that influence global temperature, precipitation patterns, and sea levels. In addition to increasing the frequency and severity of fires, floods, and landslides, climate change is expected to lead to increases in the frequency and severity of droughts, extreme heat, and severe weather, as well as to influence the spread and behavior of plant pests and vector-borne diseases.

### Drought

A drought is an extended period when precipitation levels are well below normal. Although drought is a normal part of the climate cycle, it may cause losses to agriculture, affect domestic water supply, energy production, public health, and wildlife; and contribute to wildfire conditions. Like most of California and the western United States, Suisun City chronically experiences drought cycles. Major droughts affecting Solano County occurred in 1896 to 1900, 1975 to 1977, 1991, 2004, 2006 to 2009, 2011 to 2016, and 2022. Drought impacts the City's water supply, which may in severe instances make less water available for people, businesses, and natural systems.

Drought conditions create high vulnerabilities for populations within the City, as water quality may be degraded, supplies may become more expensive, and be less available for economic drivers that depend on this resource, such as water recreation and agriculture. Populations especially vulnerable include those who may struggle to afford higher water bills, those whose employment may be jeopardized by water restrictions, and those who already have limited access to clean drinking water. These populations include households in poverty, low-resourced people of color, outdoor workers, and pollution-burdened populations. Natural systems in the City, including wetland, marsh, and riparian areas in McCoy Creek and along the Suisun Slough are highly vulnerable, as droughts can reduce the amount of freshwater flowing into and through both of these ecosystems, leading to algal blooms, low streamflow, higher temperatures, and increased erosion.<sup>12</sup>

Scientists expect that climate change will lead to more frequent and intense droughts statewide, with more years of extreme levels of precipitation, both high and low. This is expected to cause more frequent and intense droughts compared to historical occurrences. The state Cal-Adapt database indicates that snow water equivalent (i.e., the amount of water contained in snowpack) for the Westside (Yolo, Solano, Napa, Lake Colusa) Integrated Regional Water Management Region (IRWMR) will decrease from a historical annual average baseline of 10.5 inches to an annual average of 1.2 inches in an early-century drought (2023 to 2042), and to an annual average of 0.2 inches under a late-century drought scenario (2051 to 2070). Baseflows within the IRWMR may decline from a historical annual average of 6.1 to 3.4 inches under an early-century drought scenario (2023 to 2042) to 3.1 inches in a late-century drought scenario (2051 to 2070).<sup>13</sup>

### Extreme Heat

While there is no universal definition of extreme heat, California guidance documents define extreme heat as temperatures that are hotter than 98 percent of the historical high temperatures for the area, as measured between April and October of 1961 to 1990. Days that reach this level are called extreme heat days. In Suisun City, the extreme heat

<sup>12</sup> US Dept. of Interior, Bureau of Reclamation. 2017. *Bay Area Regional Reliability Drought Contingency Plan*.

<sup>13</sup> Cal-Adapt. 2018. "Annual Averages," <https://cal-adapt.org/tools/annual-averages>.



threshold is 101.9 degrees Fahrenheit (°F). An event with five extreme heat days in a row is considered a heat wave.

Extreme heat can be fatal, cause heat-related illnesses, such as heat cramps, heat exhaustion, and heat stroke, in addition to worsening respiratory and cardiovascular conditions. The most vulnerable populations are those that spend a disproportionately high amount of time outside since these populations may be unable to seek direct relief from high temperatures. Additionally, persons with chronic illnesses, populations with existing pollution burdens, and senior citizens, including seniors living alone, may have existing health conditions that make them highly vulnerable to extreme heat. Persons with financial instability, low-resourced, or those living in mobile homes, are also highly vulnerable due to a lack of financial resources to prepare for or respond to extreme heat conditions. Rolling blackouts may also prevent residents from keeping indoor air temperatures and medications cool or cause food loss due to lack of refrigeration when the power is turned off, which could harm persons with financial instability or limited income.

Energy delivery services and associated infrastructure are highly vulnerable to extreme heat, as high temperatures can stress and overload the regional grid, causing power outages and damage to the transmission lines. Railway infrastructure is also highly vulnerable to extreme heat days and prolonged periods of high temperatures, as these events can cause thermal expansion and warping of the tracks.

Extreme heat events have historically occurred in the region. In June 2000, high temperatures persisted across interior northern California for three days, resulting in 16 hospitalizations and the death of one individual, as well as road closures and widespread power outages. In June 2013, a high heat event in Solano County sickened at least 15 people.

The warmer temperatures brought on by climate change are likely to cause an increase in the frequency of extreme heat events. The state Cal-Adapt database indicates the number of extreme heat days is expected to rise from a historical annual average of 4 days per year, to 22 days per year by the middle of the century (2035 to 2064), and an annual average of 38 days per year by the end of the century (2070 to 2099).

## **Severe Weather**

Severe weather is generally any destructive weather event, but usually occurs in Solano County as localized storms that bring heavy rain, hail, thunderstorms, and strong winds. Severe weather is usually caused by intense storm systems, although types of strong winds can occur without a storm. The types of dangers posed by severe weather vary widely and may include injuries or deaths, damage to buildings and structures, fallen trees, roads and railways blocked by debris, and fires sparked by lightning. Severe weather often produces high winds and lightning that can damage structures and cause power outages. Lightning from these storms can ignite wildfires and structure fires that can cause damage to buildings and endanger people.

Since 1950, 11 federally declared major severe weather events have occurred in Solano County. These events include one coastal storm, one snow event, and five severe storm events. In January 2021, an atmospheric river event caused heavy rain and high winds across northern California. Thousands of Solano County residents lost power, with rockslides, flooding, road closures, and downed trees occurring across the region. Heavy rains also occurred in October 2021, triggering road closures, downed trees, and flooding across Solano County.



Electricity utilities throughout California, including PG&E, have begun to occasionally “de-energize,” or turn off the electricity for power lines that run through areas where there is an elevated fire risk. This is intended to reduce the risk of power lines sparking or being damaged and starting a wildfire. These activities, called public safety power shutoff (PSPS) events, result in a loss of power for customers served by the affected power lines. A PSPS event may occur at any time of the year, usually during high wind events and dry conditions. PSPS events may be limited to specific communities or affect broad swaths of the state. Four PSPS events occurred in Solano County in 2019, affecting more than 25,000 customers. Three PSPS events affected Solano County in 2021, the largest of which resulted in approximately 4,700 Solano County customers losing power.

The people most vulnerable to severe weather are those who may be directly exposed to the hazard, those who may live in less structurally resilient buildings, and those who may have difficulty preparing for or responding to severe weather due to mobility or lack of access to transportation or communication. Individuals with chronic illnesses and/or disabilities who depend on electricity for life-sustaining equipment but lack backup power supply, such as a generator or battery system, are highly vulnerable to PSPS events. Persons living on single-access roads are also highly vulnerable to severe weather, as high winds and heavy rain can cause downed trees and powerlines, isolating these persons from the rest of the community if roadways are blocked. Buildings and infrastructure, such as bridges, communication facilities, electrical infrastructure, railways, hazardous materials sites, historic buildings, and homes, are highly vulnerable to severe weather, and they can be damaged by high winds, heavy rainfall, and debris carried by severe storms.

Climate change is expected to cause an increase in intense rainfall and severe weather. This means that Suisun City could see more severe and frequent weather events resulting from these storms. While average annual rainfall may increase only slightly, climate change is expected to cause an increase in the number of years with intense levels of precipitation. Heavy rainfall can increase the frequency and severity of other hazards, including flooding.

## **Agricultural and Ecosystem Pests**

Agricultural pests and diseases can affect crop plants, orchards, and nurseries throughout and surrounding the City of Suisun City. Pests and diseases can slow the growth of plants, inflict damage, or lead to fatalities. Major pests of concern in Solano County include Asian Citrus Psyllid, European Grapevine Moth, Glassy-Winged Sharpshooter, Gypsy Moth, Japanese Beetle, Light Brown Apple, Mediterranean Fruit Fly, Melon Fly, Oriental Fruit Fly, Asian Gypsy Moth, Rosy Moth, Nun Moth, and Siberian Silk Moth. Pesticides and herbicides can help crops resist pests and diseases and new crop varieties may be pest-resistant; however, quickly evolving pests may make it difficult for some plant species to survive; changing crop varieties can also be expensive for farm owners.

Solano County has been subject to agricultural and ecosystems in the past. False yellowhead (*Dittrichia viscosa*) was detected in the county in 2014. In 2017, a quarantine was initiated in response to the Mediterranean Fruit Fly (or Medflies). This quarantine encompassed 108 square miles of Solano County and was declared eradicated in August 2018. Pest activity is likely to increase as higher temperatures caused by global warming allow insects to reproduce more rapidly and increase the activity window for pests and diseases.



Persons working in landscaping or agricultural industries may be indirectly affected by agricultural and ecosystem pests and diseases that damage crops. Damage to crops and other plants can reduce work opportunities, create economic hardships for some workers, and cause employees to be let go from their jobs. The County implements a number of pest-control programs, including inspections of shipping terminals, placement of insect traps, and the Pierce's Disease Control, Sudden Oak Death, and Phytosanitary Certification Programs.

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## **Goal PHS-15 Reduce risks to people and property from hazards related to climate change.**

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### **Objective PHS-15 Minimize the effects of drought, extreme heat, severe weather, and agricultural and ecosystem pests.**

- |                         |  |
|-------------------------|--|
| <i>Policy PHS-15.1</i>  | <i>The City will encourage the installation of water-efficient landscaping on all public and private property.</i>   |
| <i>Policy PHS-15.2</i>  | <i>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.</i>  |
| <i>Policy PHS-15.3</i>  | <i>The City will support the installation of greywater systems in existing development.</i>  |
| <i>Policy PHS-15.4</i>  | <i>The City will collaborate with the Solano County Water Agency and Solano Resource Conservation District to share best practices regarding drought management and distribute resources to the community.</i>   |
| <i>Policy PHS-15.5</i>  | <i>The City will educate the general public about the importance of water conservation.</i>  |
| <i>Policy PHS-15.6</i>  | <i>The City will coordinate with public agencies, utilities, and community-based organizations to establish a network of equitably located resilience hubs throughout Suisun City and ensure that resilience hubs are situated outside of areas at risk from hazard impacts to the extent possible, offer refuge from extreme heat and other hazardous events, and are equipped with renewable energy generation and backup power supplies. Such facilities should be in easily accessible locations and available to all community members.</i> |
| <i>Policy PHS-15.7</i>  | <i>The City will work with Pacific Gas and Electric Company (PG&amp;E) to promote programs encouraging reduced energy use during extreme heat events.</i>  |
| <i>Policy PHS-15.8</i>  | <i>The City will encourage the use of heat-reflective building and paving materials in private development.</i>  |
| <i>Policy PHS-15.9</i>  | <i>The City will require the use of heat-reflective building and paving materials in Capital Improvement Projects and public development.</i>  |
| <i>Policy PHS-15.10</i> | <i>The City will use shade structures, installation of green space, and heat-resilient building techniques, as feasible, to ensure that key public facilities, such as schools and bus stops, are adequately protected from extreme heat.</i>  |

- Policy PHS-15.11      The City will install shade cover, equitably throughout the City, prioritizing natural solutions such as trees when feasible.*
- Policy PHS-15.12      Where feasible, encourage the use of existing natural features and ecosystem processes, or the restoration of, when considering alternatives for the conservation, preservation, or sustainable management of open space. This may include, but is not limited to, aquatic or terrestrial vegetated open space, systems and practices that use or mimic natural processes, and other engineered systems, to provide clean water, conserve ecosystem values and functions, and provide a wide array of benefits to people and wildlife.*
- Policy PHS-15.13      The City will work with local community organizations and the Solano County Department of Health and Social Services to provide the community with information about the health effects of extreme heat and measures to minimize heat exposure and health effects and that vulnerable members of the community are reachable during high heat events.*
- Policy PHS-15.14      The City will support the undergrounding of infrastructure, particularly electrical utilities.*
- Policy PHS-15.15      The City will provide critical facilities, including water and wastewater systems, emergency and medical services, and heating and cooling centers, with adequate backup power supplies to support operations during a severe weather event that disrupts power service.*
- Policy PHS-15.16      The City will encourage building owners to install backup battery systems and will help building owners and installers connect with funding mechanisms for these systems.*

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**Program PHS-15.1      Municipal Code Update and Water Conservation**

The City will update the Municipal Code to streamline the installation of greywater systems and require new development to use of heat-reflective building and surfacing materials in new development to the extent feasible.

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**Program PHS-15.2      Greywater Systems**

The City will install greywater systems in existing municipal buildings, as feasible, and will collaborate with local water providers to encourage the installation of greywater systems in private development.

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**Program PHS-15.3      Extreme Heat Response Plan**

The City will collaborate with community and regional community services and health providers to develop and implement an Extreme Heat Response Plan.

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**Program PHS-15.4      Multi-Benefit Resilience Features**

The City will implement features that address multiple hazards, such as extreme heat and air quality, or that include sustainability benefits, such as on-site renewable energy generation and backup battery systems.



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**Program PHS-15.5   Community Outreach**

The City will work with local community groups and volunteers to help establish a task force to conduct outreach and house calls to vulnerable members of the community during hazardous events.

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**Program PHS-15.6   Tree Planting**

The City will prepare a tree master plan for the City that emphasizes planting of low-maintenance native tree species and includes quantified goals and tracking methods, including mapping the tree canopy, and prioritizes planting in vulnerable communities and along safe routes to schools. The City will allocate funding for regular tree maintenance.

---

**Program PHS-15.7   Building Retrofits**

The City will help connect residents and business owners with home and business weatherization, energy and water efficiency, and floodproofing programs, including helping them find rebates and contractors for these programs. The City will conduct targeted outreach among vulnerable communities.

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**Program PHS-15.8   Utility Undergrounding**

The City will partner with PG&E to develop a plan to secure funding for the undergrounding of electrical utilities.

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**Program PHS-15.9   Coordinate with Regional Adaptation Strategy**

The City will seek funding to collaborate with other local, regional, and state agencies to develop strategies to adapt to the effects of climate change and promote the other objectives of the General Plan.

Development of an adaptation strategy would generally be anticipated to include a prioritization of adaptive needs based on the City's Public Health and Safety Element 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. 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, 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.

## Emergency Response

All communities face the possibility of disasters and emergency situations, whether they are of natural or human-related causes. Citizens and first responders must be prepared to react to such an emergency. The Fire Department and Police Department are equipped to provide a first line of emergency response in the unlikely event of a major disaster. The Police Department operates a variety of emergency response and public safety programs.

Suisun City participates in an emergency response mutual-aid agreement with other Solano County jurisdictions and fire protection districts. Mutual-aid response is coordinated by the Solano County Dispatch Center.

## Emergency Evacuation

With advanced warning, evacuations can be effective in reducing injury and loss of life during a catastrophic event. Exhibit 9-15 shows evacuation routes serving Suisun City, including SR 12, Walters Road, Sunset Avenue, Marina Boulevard, Main Street, Pennsylvania Avenue, Cordelia Street, Cordelia Road, Railroad Avenue, East Tabor Avenue, Peterson Road, and Lotz Way. Exhibit 9-16 shows residential parcels with evacuation constraints. Evacuation-constrained parcels south of SR 12 are in shoreline flood hazard areas and parcels along McCoy Creek are in flood hazard areas. These evacuation-constrained areas may have only one emergency evacuation route. The lack of multiple emergency access points limits roadway access for these properties, which may create difficulties if there is a need to evacuate.

Climate change-related shifts in wildfire, inland and shoreline flooding, extreme heat, and severe weather patterns will likely make hazardous conditions both more frequent and intense. Given the ability of wildfires, floods, extreme heat, and severe weather to damage structures and infrastructure and harm human health, increased frequency of these natural hazards will likely increase demand for disaster preparation and recovery assistance. These hazards may also block evacuation routes, isolating residents and preventing them from evacuating during emergencies.

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### **Goal PHS-16 Minimize loss of life and damage to property resulting from natural and human-caused hazards by ensuring adequate emergency response and evacuation.**

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#### **Objective PHS-16 Improve emergency response and access throughout the City.**

- |                        |   |
|------------------------|---|
| <i>Policy PHS-16.1</i> | <i>The City will use the Local Hazard Mitigation Plan and Emergency Operations Plan to prepare for immediate response, adaptation, long-term recovery, and planning for future community resiliency in the event of a disaster.</i>   |
| <i>Policy PHS-16.2</i> | <i>The City incorporates the most recent version of the Solano County Multi-Jurisdictional Hazard Mitigation Plan, Suisun City Annex, most recently certified by FEMA, into this Safety Element by reference, as permitted by California Government Code Section 65302.6.</i> |
| <i>Policy PHS-16.3</i> | <i>The City will review development and redevelopment projects, plans, and public investment decisions to ensure consistency with the Multi-Jurisdictional Hazard Mitigation Plan.</i>  |



- Policy PHS-16.4      The City will develop an assessment plan to determine railway points of vulnerability to more accurately predict areas of which would be impacted most during railway damage events. This plan can include preparedness plans to quickly initiate detours to maintain a secondary access point to the interstate and operations to activate.*
- Policy PHS-16.5      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-16.6      The City shall designate evacuation routes in the event of a fire or other citywide emergency requiring the evacuation of a substantial portion of the City's residents.*
- Policy PHS-16.7      Require new development in the WUI, 100-year floodplain, or shoreline flooding area to have access to at least two emergency evacuation routes.*
- Policy PHS-16.8      Encourage existing development that is in a WUI or 100-year floodplain or shoreline flooding area to have access to at least two emergency evacuation routes.*
- Policy PHS-16.9      The City will work with local transit and social service providers to develop evacuation strategies for residents who may face mobility constraints or lack access to a private vehicle.*
- Policy PHS-16.10     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-16.11     The City will encourage the public to prepare for disasters through community forums, presentations, and media by developing personal emergency response plans and by maintaining a three-day preparedness kit for home and work.*
- Policy PHS-16.12     Educate residents and businesses regarding appropriate actions to safeguard life and property during and immediately after emergencies.*
- Policy PHS-16.13     Expand the capabilities of the Community Emergency Response Team to provide more community members the tools to respond to disasters.*
- Policy PHS-16.14     Increase resident enrollment in Alert Solano and Nixle.*
- Policy PHS-16.15     Identify additional emergency warning mechanisms that can increase access to emergency warnings and ensure that emergency notifications are provided in formats and languages appropriate for the demographics of Suisun City.*

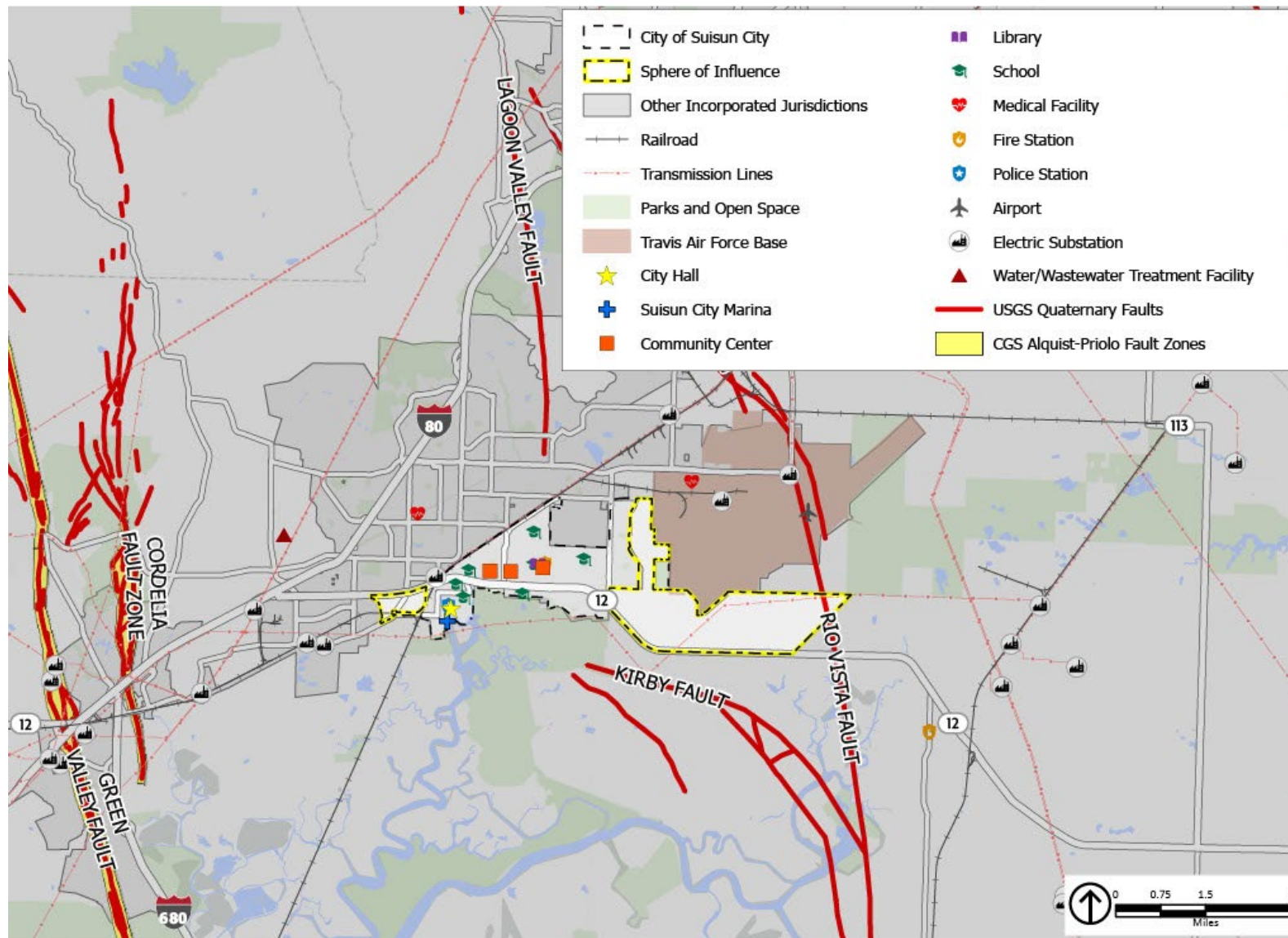
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#### **Program PHS-16.1    Implement and Update the Local Hazard Mitigation Plan**

The City will collaborate with interested service providers and the County to update the Multi-Jurisdictional Hazard Mitigation Plan every five years and ensure that it is certified by FEMA. Regular updates will account for changes in environmental conditions, new emergency response methods, new technologies, and new laws and regulations.



The City will seek funding to implement action items listed in the Multi-Jurisdictional Hazard Mitigation Plan, Suisun City Annex, and to update the plan regularly.

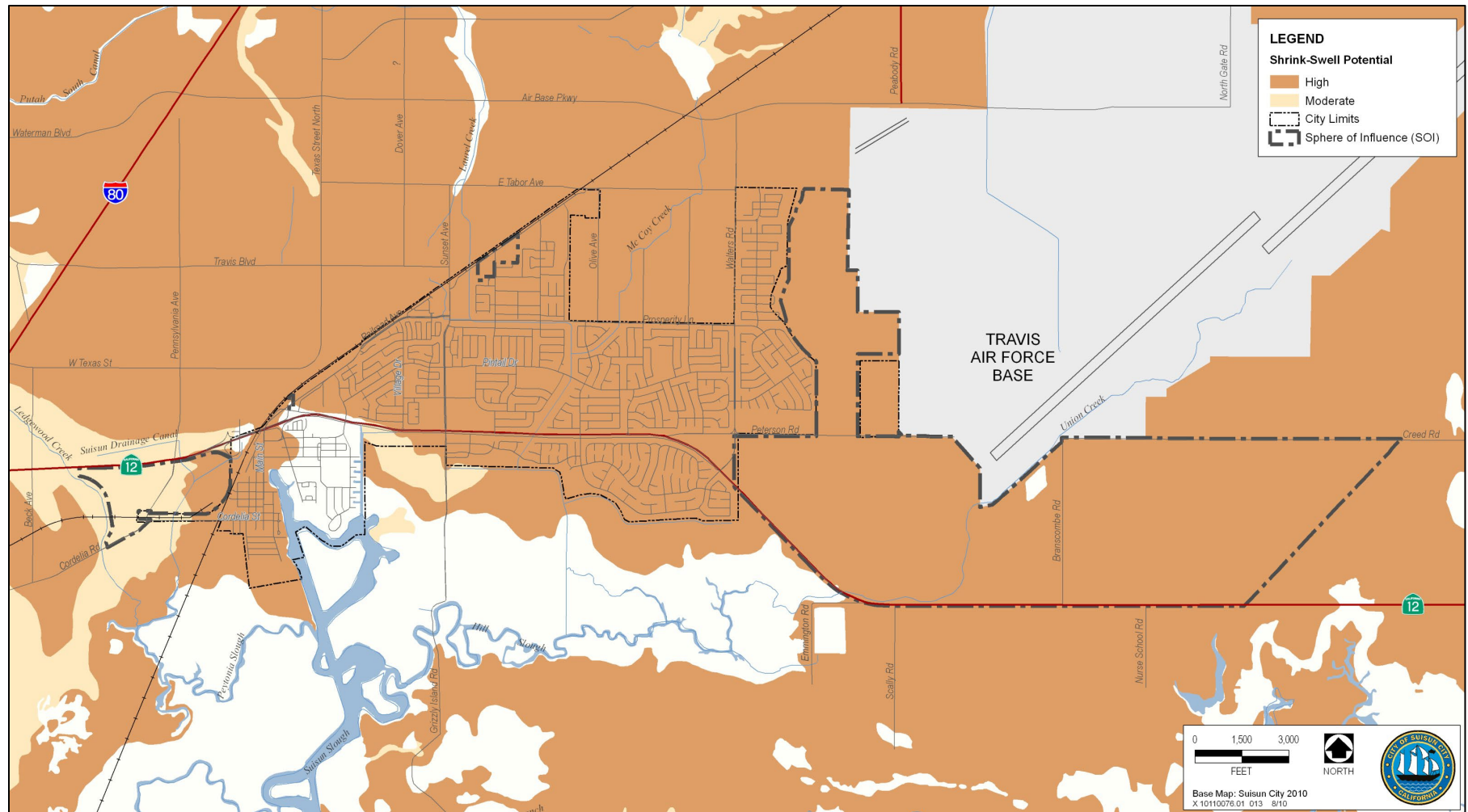


Source: USGS 2018, CGS 2017, Solano LAFCO 2020, USDOT BTS 2021, PlaceWorks 2022, ESRI

Exhibit 9-12

Regional Seismicity



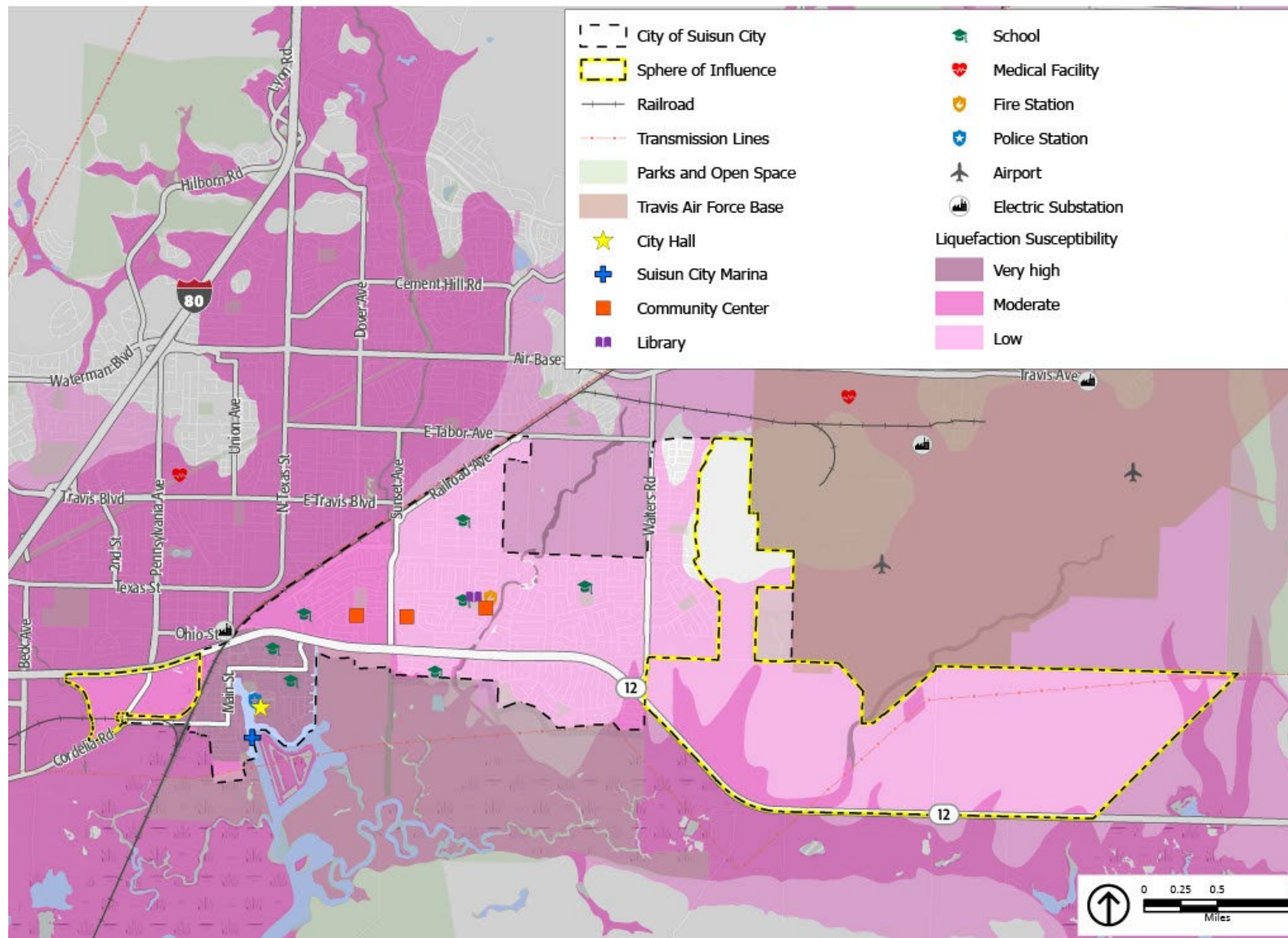


Source: NRCS  
Exhibit 9-13

Shrink-Swell Potential







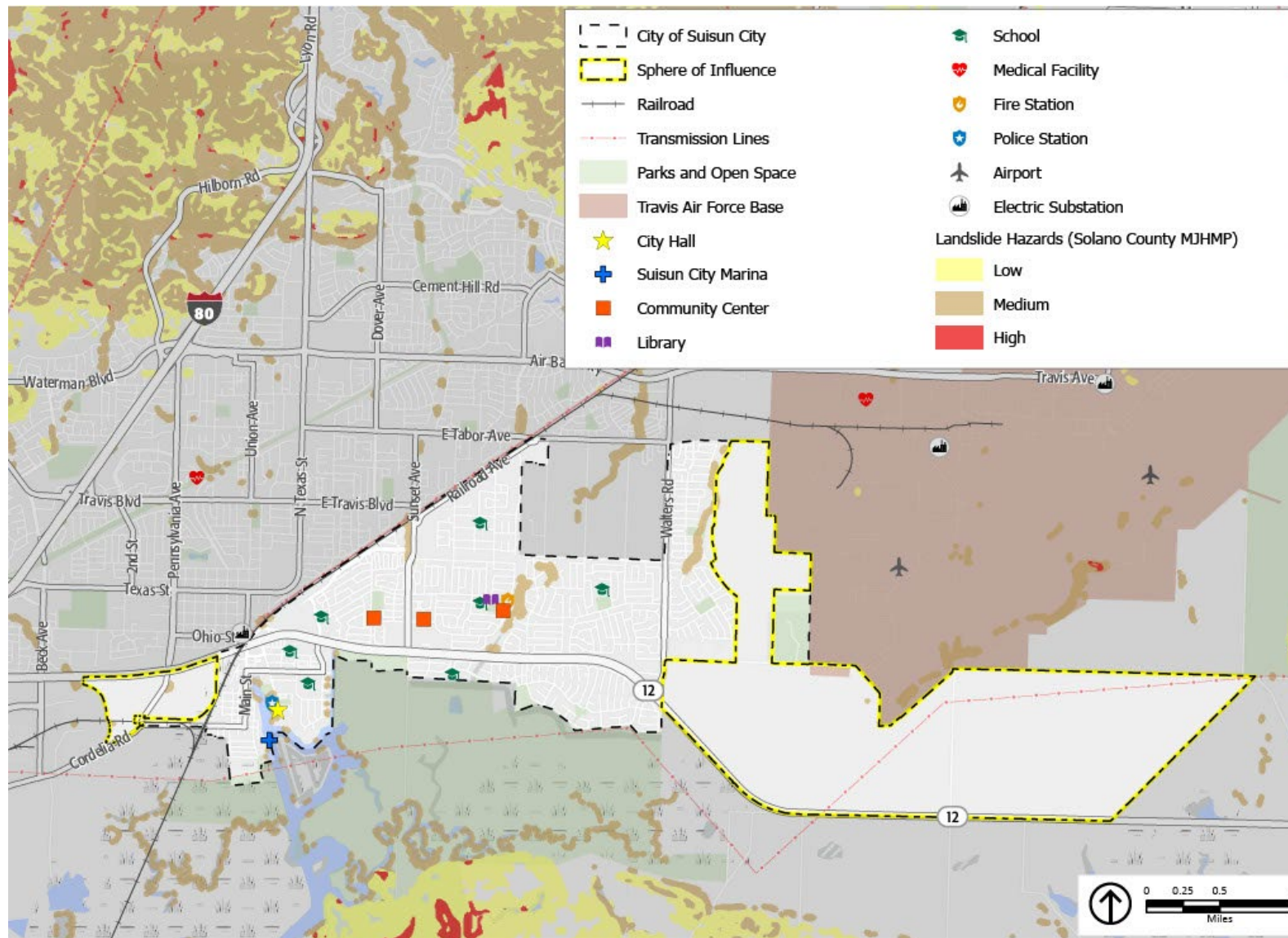
Source: USGS 2006, Solano LAFCO 2020, USDOT BTS 2021, PlaceWorks 2022, ESRI

Exhibit 9-14

Liquefaction Susceptibility





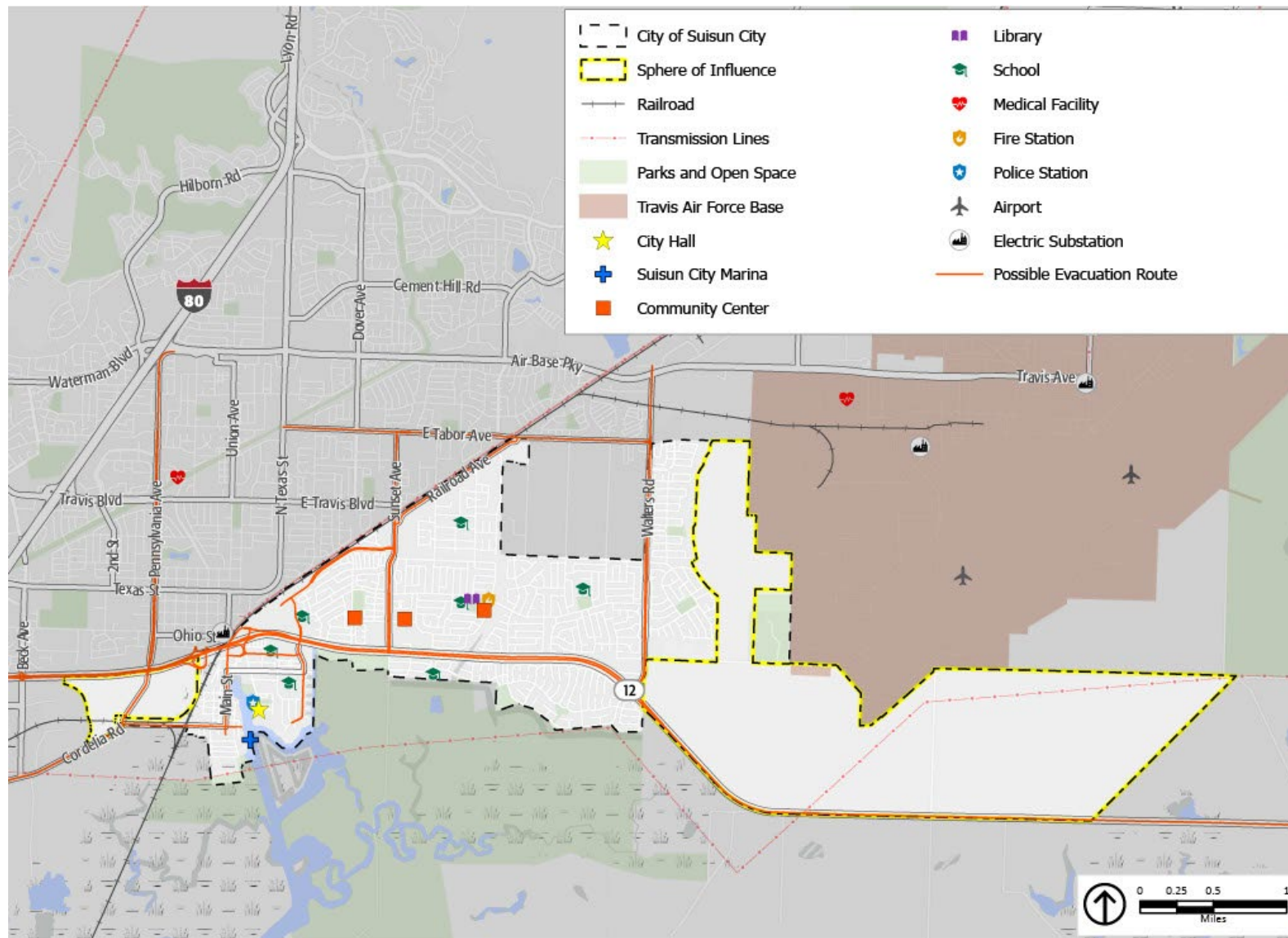


Source: Solano County 2021, Solano LAFCO 2020, USDOT BTS 2021, PlaceWorks 2022, ESRI

Exhibit 9-15

Landslide Hazard Zones





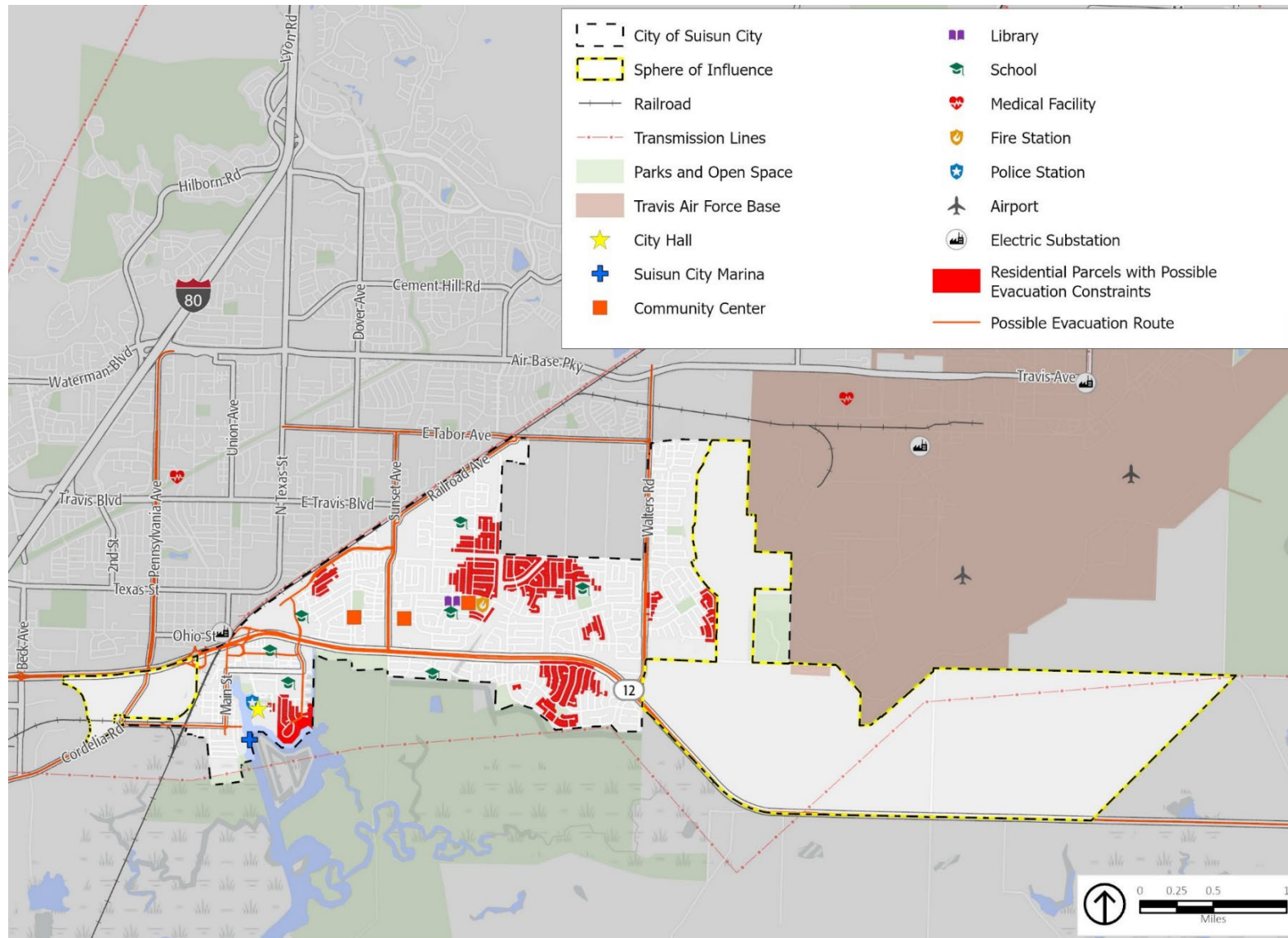
Source: Solano County 2021, Solano LAFCO 2020, USDOT BTS 2021, PlaceWorks 2022, ESRI

Exhibit 9-16

Evacuation Routes







Source: Solano County 2021, Solano LAFCO 2020, USDOT BTS 2021, PlaceWorks 2022, ESRI

**Exhibit 9-17**

**Evacuation-Constrained Residential Parcels**







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**Program PHS-16.2   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
- Tolenas Avenue
- Walters Road
- Bella Vista Drive
- Pennsylvania Avenue
- East Tabor Avenue
- Lotz Way

These streets provide for alternate major routes east, west, and north out of the community, depending on the nature of the emergency.

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**Program PHS-16.3   Roadway Standards**

In coordination with local fire districts, develop and maintain minimum roadway, ingress, and egress standards for evacuation of residential areas in the wildland-urban interface or flood-hazard area.

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**Program PHS-16.4   Evacuation Planning**

Cooperate with neighboring jurisdictions and public protection agencies to delineate evacuation routes, identifying their capacity, safety, and viability under different hazard scenarios, as well as emergency vehicle routes for disaster response, and where possible, alternate routes where congestion or road failure could occur. Update as new information and technologies become available.

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**Program PHS-16.5   Evacuation Program**

Develop an evacuation assistance program in coordination with local transit providers to help those with limited mobility or lacking vehicle access.

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**Program PHS-16.6   Emergency Alerts**

Continue to provide alerts about potential, developing, and ongoing emergency situations in languages and formats appropriate to City residents.

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**Program PHS-16.7 Community Emergency Response**

Coordinate with Solano Voluntary Organizations Active in Disaster to continue providing CERT training programs for community members.

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**Program PHS-16.8 Emergency Response Education**

Work with community groups and Solano Voluntary Organizations Active in Disaster to develop and implement community emergency response education programs.

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**Program PHS-16.9 Multi-Jurisdictional Hazard Planning**

Continue to participate in the Multi-Jurisdictional Hazard Mitigation Plan update and development process.

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**Travis Air Force Base**

Travis AFB is a major source of economic stability in Suisun City, and while the base provides many benefits for the City, its proximity can create additional hazard mitigation planning challenges. As mentioned previously, the proximity of the base to the City contributes to changes in the noise environment and operations at the base have resulted in some contamination, making the base a Superfund site. The primary environmental contaminants found at Travis AFB include solvents, metals, and fuels. Additionally, the storage of explosives within the base could have some effects on land uses in Suisun City in the event of major upset.

Off-base migration of contaminants appears to be very limited, with minimal potential for harmful exposure. 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 change on the base, the likelihood of human exposure should be re-evaluated by the Air Force, the EPA, the State of California, or Agency for Toxic Substances and Disease Registry (ATSDR).

Additionally, the Planning and Zoning Law (California Government Code, Sections 65352, 65940, and 65944) requires consultation with U.S. Armed Forces Personnel during general plan updates that could affect ongoing military operations.

Under Senate Bill No. 1462, the City must notify the U.S. Air Force of proposed land uses immediately adjacent to Travis AFB. The *Travis Air Force Base Land Use Compatibility Plan* encourages lands immediately adjacent to Travis AFB to be used for housing Base personnel, equipment, and buildings so that airport crash hazards are minimized and military security is enforced. Also, a buffer zone around these immediately adjacent areas is established to restrict sensitive land uses, such as schools, day care centers, senior centers, and other facilities where occupants have reduced effective mobility and are unable to respond to emergency situations from the buffer zone.




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## **Goal PHS-17   Reduce the Potential for Human Injury or Property Damage Resulting from Activities at Travis Air Force Base**

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**Objective PHS-17** Promote the ongoing mission of Travis AFB, while avoiding local risks related to ongoing operations.

- Policy PHS-17.1      The City will regularly coordinate closely with Travis Air Force Base to ensure that existing and future land uses do not interfere with existing or planned operations at the base.*
- Policy PHS-17.2      The City will restrict land uses and the height of development according to the requirements of the Travis Air Force Base Airport Land Use Plan.*
- Policy PHS-17.3      The City shall prohibit the future development of sensitive land uses, including residential uses and schools, critical facilities, or uses that could result in large gatherings of people, within the base's Accident Potential Zone 1 boundary, or in any other areas that the base determines to be at a greater risk of upset.*
- Policy PHS-17.4      The City will coordinate with the Army Corps of Engineers and Travis Air Force Base 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-17.5      New developments and public investments involving earth disturbance in the eastern area of the City's Sphere of Influence shall incorporate permit requirements in coordination with the State Department of Toxic Substances Control to reduce risk associated with munitions or explosives.*

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### **Program PHS-17.1   Travis Air Force Base Consultation**

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 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.

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# Glossary

**Basic employment:** Basic industries are those that export from the City and/or region. Basic employment occurs within basic industries. Basic industries are distinguished from non-basic industries, such as retail and commercial services, which serve basic industries, residents, and employees.

**Block length:** The distance between four-way intersection centerlines. Block length can also be measured along the one leg of a three-way intersection that terminates into a cross street.

**Buildout:** Refers to wide array of activities that could occur during the lifetime of the General Plan. "Buildout" is also a term used to describe the future condition of the City after buildout occurs. In general, this future state would be characterized by full development of areas identified for developed uses.

**Carbon or Greenhouse Gas Offset:** Carbon offset programs are designed to achieve a net emissions objective by allowing additional emissions but also requiring purchase of offsetting credits. A factory or development may not be able to feasibly reduce its own carbon footprint, but would instead achieve some "net" carbon emissions objective through funding emissions reducing activities elsewhere. Funds from these credits are used for a variety of projects, such as planting trees (which absorb carbon dioxide), converting vehicle fleets to more efficient/less polluting technologies, funding for energy efficiency retrofits of existing buildings, renewable energy projects, and other activities.

**Carbon sequestration:** The removal and storage of carbon from the atmosphere in oceans, forests, soils, or physical/biological processes.

**Community Noise Equivalent Level (CNEL):** An average of 24-hour Leq with a 10 dBA 'penalty' for noise events that occur during noise-sensitive hours of the day (10:00 p.m. to 7:00 a.m.). An additional 5 dBA 'penalty' is added to noise events that occur between 7:00 p.m. to 10:00 p.m.



**Complete streets:** Streets designed to accommodate multiple travel modes. This means that streets would have not only travel lanes for vehicles, but also room for bicycles, sidewalks, street trees, and bus stops and pull-out lanes (along bus routes).

**Consult:** to ask for advice or opinion. This does not necessarily mean that the City is obligated to act in accordance with the advice and opinion received.

**Coordinate:** to solicit, consider, and respond to comments from other agencies, organizations, or groups in order to bring common actions, movements, or conditions. Coordinate is used in the context of the general plan to direct an organized approach to addressing inter-jurisdictional issues that are not solely under the purview of the City. This does not imply that the City is superior or subordinate to other agencies, organizations, or groups. Rather, it indicates that the City will confer with other agencies, organizations, or groups to find mutually-agreeable solutions.

**Defensible space:** Area surrounding a building or buildings in which basic fire protection and prevention measures are implemented, including control of vegetation, fuel modification, and the provision of adequate emergency access.

**Density:** The amount of residential development permitted in a given area, typically expressed as the number of dwelling units per acre of land (du/ac).

**Design Speed:** The speed at which most drivers will travel given the built environment and speed controls created by the street width and design.

**Development/s:** The physical extension and/or construction of land uses. Development activities could include the subdivision of land; construction or alteration of structures, roads, utilities, and other facilities; installation of water and sewer systems; grading; deposit of refuse, debris, or fill; and clearing of vegetative cover (with the exception of agricultural activities). Ministerial projects, such as standard building permits and routine repair and maintenance activities are not considered "developments" in the context of the General Plan. The continuation of existing uses or operations is not considered a "development" in the context of this General Plan.

**Floor-Area Ratio (FAR):** The permitted gross interior building floor area (on all floors/levels of a building) divided by the total area of the site.

**Goal:** A statement of the desired future state and/or the overarching intent of a set of policies.

**Gross acre:** includes all land (including streets, other rights-of-way, and easements) designated for a particular use.

**Infill / infill development:** Projects within existing City limits that can be served by connecting to existing municipal water and sewer trunk lines that are present in the vicinity of the subject project.

**Equivalent Noise Level (Leq):** The energy mean (average) noise level. The instantaneous noise levels during a specific period of time in dBA are converted to relative energy values. In noise environments determined by major noise events, such as aircraft overflights, the Leq value is heavily influenced by the magnitude and number of single events that produce the high noise levels.

**Labor force:** Residents of a community who are either working or actively looking for work, regardless of the work location.

**Level of Service (LOS):** A way of describing perceived traffic flow, measured primarily at the intersection of two or more streets where there are traffic controls (stop signs, signal lights, etc.). The most common way to express LOS is by assigning a letter from "A" to "F." LOS "A" represents free flow conditions, while LOS "F" represents the most congested traffic conditions (long lines at intersections to total gridlock).

## G L O S S A R Y

**Low Impact Development:** Development techniques intended to address stormwater management through surface detention and infiltration that mimic natural systems rather than constructed piped systems.

**Mixed-Use:** Sites combining more than one use as an integrated project and sometimes in the same building, such as office, residential, commercial, or services.

**Multi-Modal (Transportation):** A system or facility that accommodates more than one method for people to travel for example, not only individual cars, but also pedestrians, bicycles, and public transportation).

**Net acreage:** excludes streets, other rights-of-way, and other areas not included within legal lots.

**Open space:** Land or water that is unimproved and devoted to: managed production of resources; the preservation of natural resources; outdoor recreation; and/or public safety.

**Planning Area:** Land areas to which the General Plan goals, objectives, policies, and programs apply. This includes all lands within the current City limits and projects that propose annexation to the City of Suisun City.

**Policy:** Decision-making guide for the City in managing land use change and other decisions related to projects, plans, codes and standards, and investments.

**Program:** proactive activities, techniques, or processes that will be undertaken to implement General Plan policies.

**Sphere of Influence (SOI):** Represents the future probable physical boundary and service areas.

**Renewable Natural Resources:** Resources that can be replaced by natural ecological cycles or sound management practices (e.g., forests and plants).

**Riparian Habitat:** The land and plants bordering a watercourse or lake.

**Sensitive receptors:** Those people or things which are most susceptible to adverse effects. For instance, sensitive receptors to noise and air pollutants might include schools, day care centers, and health care facilities.

**Shall:** That which is obligatory.

**Should:** A less rigid directive than "shall;" a directive to be honored and followed if possible, in the absence of compelling reasons for departure from a policy.

**Special Status Species:** Plants and animals that are legally protected under the Endangered Species Act (ESA), California Endangered Species Act (CESA), or other regulations, and species that are considered sufficiently rare by the scientific community to qualify for such listing.

**Transit Supportive:** The degree to which development is located and design in order to support existing and planned future transit. For the Downtown Waterfront Priority Development Area, this is residential development of at least 20 units per acre (net) or non-residential development with a floor area ratio of at least 2.

**VMТ (vehicle miles traveled):** A measure of the number of travel miles that are generated by a particular activity or land use. VMT provides a measure of transportation-related impacts (such as air pollutant emissions) generated by a particular project.

Wetlands: Areas that are permanently wet or periodically covered with shallow water, such as saltwater and freshwater marshes, open or closed brackish marshes, swamps, mud flats, and vernal pools.

Will: Indicates the intent to act.