

6 ENVIRONMENTAL RESOURCES

This chapter describes the existing conditions of the environmental resources within the Policy Area, including: agricultural resources, biological resources, water resources and water quality, cultural and historical resources, mineral resources, air quality, and scenic resources.

6.1 Agricultural Resources

Introduction

This section describes the existing conditions of the agricultural resources within and adjacent to the Policy Area. It is based on information from the California Department of Conservation Farmland Mapping and Monitoring Program (FMMP), aerial photographs of the city, and the Natural Resources Conservation Service (NRCS) Soil Survey.

Existing Conditions

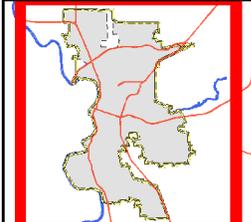
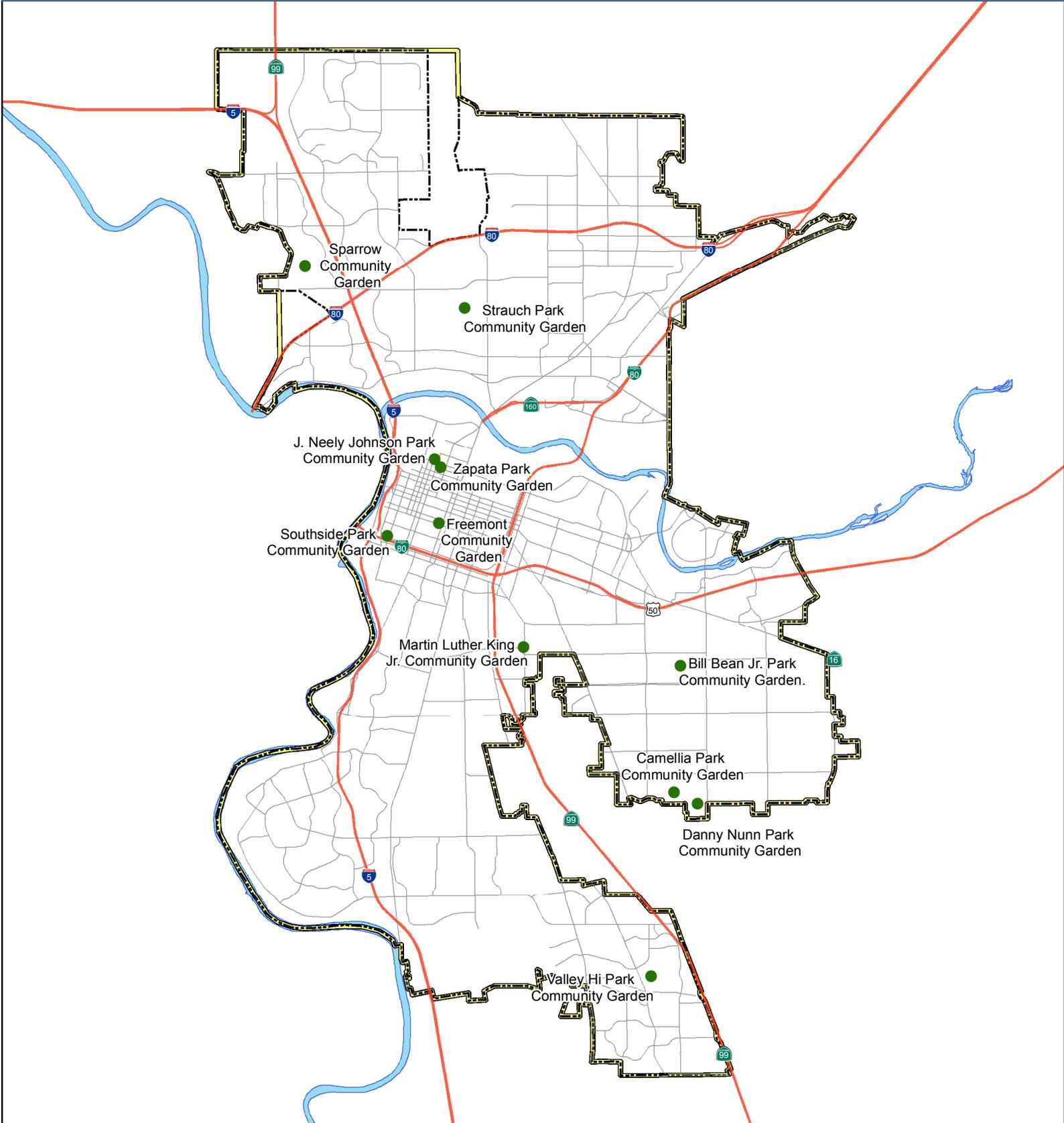
Citywide

Existing Agriculture

The city of Sacramento is built upon soil that is among the most fertile in California. As the city has grown, agricultural lands have been converted to non-agricultural uses. Today, the city of Sacramento is mostly urbanized, with limited amounts of active commercial agricultural lands remaining that support large-scale operations. Remaining agricultural land and commercial agricultural activity within the city limits are located in the southern area of the city and the northern area located within the North Natomas Community Plan area (see Figure 6-1).

Community Gardens. The City of Sacramento Department of Parks and Recreation operates 10 permanent community gardens (Table 6-1). These gardens provide residents of the Policy Areas with opportunities to garden.

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Legend

- Major Roads
- Highways
- Community Gardens
- - - City Limits
- ▭ Policy Area
- ▭ Waterways



0 1 2 Miles

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Table 6-1 Community Gardens within the Policy Area

<i>Name</i>	<i>Location</i>	<i>Approximate Number of Plots</i>
Fremont Community Garden	14th and Q Street	50
J. Neely Johnson Park Community Garden	516 11th Street in downtown	10
Danny Nunn Park Community Garden	6920 Power Inn Road in South Sacramento	20
Southside Park Community Garden	5th Street near W Street in downtown	40
Bill Bean Jr. Park Community Garden	7400 17 th Avenue in south Sacramento	34
Martin Luther King Jr. Community Garden	3668 Martin Luther King Jr. Boulevard	41
Strauch Park Community Garden	3075 Northstead Drive in south Natomas	24
Sparrow Community Garden	3219 Sparrow Drive in north Natomas	14
Valley Hi Park Community Garden	8185 Center Parkway in south Sacramento	22
Zapata Park Community Garden	905 E Street in downtown	14

Source: City of Sacramento 2011

California Department of Conservation Important Farmland Classifications

The California Department of Conservation Farmland Mapping and Monitoring Program (FMMP) combine technical soils ratings and current land use information to create an inventory of Important Farmland. Information on soils is primarily taken from the U.S. Department of Agriculture soil surveys. The California Department of Conservation divides Important Farmland into four categories: 1) Prime Farmland, 2) Farmland of Statewide Importance, 3) Unique Farmland, and 4) Farmland of Local Importance. According to the 2010 FMMP maps, the Policy Area contains 1,175 acres of Prime Farmland, 577 acres of Farmland of Statewide Importance, 67 acres of Unique Farmland, and 3,575 acres of Farmland of Local Importance, for a total of 5,394 acres in the Policy Area. The FMMP classification is based on multiple factors, including soil type, the type of crop produced, agricultural zoning, and potential for irrigation. Important Farmland in the Policy Area is shown on Figure 6-1. Important Farmland category definitions and Farmland acreages within the Policy Area are shown in Table 6-2.

Table 6-2 Farmland Mapping and Monitoring Program Farmland Classifications within the Policy Area

<i>Land Classification</i>	<i>Definition</i>	<i>Acres within Policy Area</i>
Prime Farmland	Prime Farmland generally consists of Class I and II soils. They have the soil quality, growing season, and moisture supply needed to produce sustained high yields of crops when treated and managed, including water management, according to current farming methods.	1,175
Farmland of Statewide Importance	Similar to Prime Farmland but with some minor differences, such as greater slopes or less ability to store soil moisture. The land must have been used for irrigated agricultural production some time during the four years prior to the mapping date.	577
Unique Farmland	Farmland that is not classified as prime or of statewide importance, which produces one of California's 40 leading economic crops, such as grapes, artichokes, avocados, and dates. Soil characteristics and irrigation are not considered.	67
Farmland of Local Importance	Land other than Unique Farmland, which may be important to the local economy due to its productivity or value. Determined by each county's board of supervisors and a local advisory committee.	3,575
Grazing Land	Land on which the existing vegetation is suited to the grazing of livestock. The minimum mapping unit for Grazing Land is 40 acres.	929
Urban and Built-up Land	Land occupied by structures with a building density of at least 1 unit to 1.5 acres, or approximately 6 structures to a 10-acre parcel. Common examples include residential, industrial, commercial, institutional facilities, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, and water control structures.	53,745
Other Land	Land not included in any other mapping category. Examples of land classified as Other Land include low density rural developments; timber, wetland, and riparian areas not suitable for livestock grazing; confined livestock, poultry or aquaculture facilities; strip mines, borrow pits; and water bodies smaller than forty acres. Vacant and nonagricultural land surrounded on all sides by urban development and greater than 40 acres is also mapped as Other Land.	4,301
Total		65,494^a

Note: ^a Total does not include acreage of water in the Policy Area.

Source: California Department of Conservation 2010

Soils

The NRCS has mapped over 30 individual soil units in the Policy Area (see Figure 7-2 in section 7.1, Geological and Seismic Hazards). The predominant soil units in the Policy Area are the San Joaquin, Clear Lake, Galt, Cosumnes, and Sailboat soils, which account for over 60 percent of the total land area. The remaining soil units each account for only a few percent or less of the total. The San Joaquin soils are generally present in the eastern and southeastern part of the Policy Area; Clear Lake and Cosumnes soils occur in the northern part of the Policy Area; and Galt soils are in the southwestern part of the Policy Area, in an area generally bounded by I-5 and State Route 99. Sailboat soils occur along the American and Sacramento rivers.

Capability Rating. There are several methods for classifying soil quality for agricultural uses. One method involves a soil capability rating provided by the NRCS. Capability ratings indicate, in a general way, the suitability of soils for most kinds of field crops. The classes are developed according to the limitation of the soils when used for field crops, the risk of damage when they are used, and the way they respond to treatment. The broadest capability groups are designated by Roman numerals I through VIII. Prime Farmland, which comprises approximately 1,175 acres in the Policy Area, usually consists of Class I and Class II soils.

Storie Index Rating. The NRCS has identified and mapped soils in Sacramento County in the Sacramento County Soil Survey and rated suitability of soils for agriculture using the Storie Index. This index expresses numerically the relative degree of suitability of a soil for general intensive agriculture. The rating is based on soil characteristics only and is obtained by evaluating such factors as soil depth, surface texture, subsoil characteristics, drainage, salts and alkali, and relief.

Williamson Act Contracts

The California Land Conservation Act of 1965 (commonly referred to as the Williamson Act) enables local governments to enter into contracts with private landowners for the purpose of restricting specific parcels of land to agricultural or related open space use. The Williamson Act is described in detail below in the Regulatory Setting. As shown on Figure 6-2, there are several parcels adjacent to the Policy Area under Williamson Act contract, but none within the Policy Area.

Adjacent Lands

Lands adjacent to the Policy Area are among the most productive agricultural regions in California. The area south of the Policy Area and extending into the Delta and the area west of Policy Area and extending towards the city of Davis are productive regions for such crops as tomatoes, pears, sugar beets, and alfalfa. The land to the east of the Policy Area is less suitable for crop production, but is well-suited for grazing livestock. Lands to the north of the Policy Area are productive sources of rice, grains, fruits, and other field crops. Agriculture, including fruit and vegetable processing and shipping, comprises a significant portion of the region's income and employment. Rice, tomatoes, wine grapes, prunes, peaches, almonds, and walnuts are among the more lucrative crops.

Regulatory Context

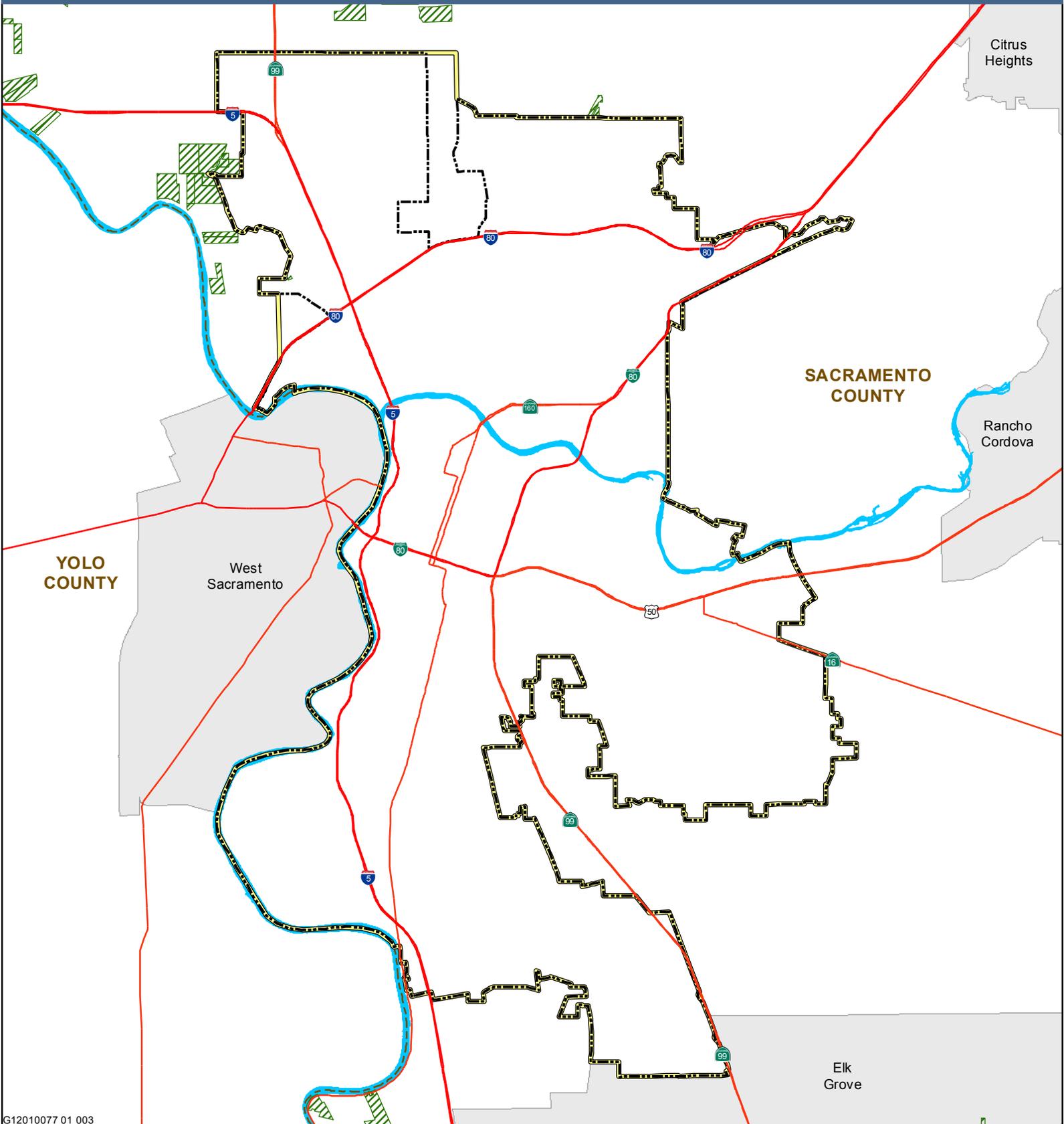
Federal

There are no specific Federal regulations that pertain to agricultural resources.

State

California Code of Regulations, Title 3: Food and Agriculture

The California Code of Regulations, Title 3, sections 6000-6920 regulate the registration, management, use, and application of pesticides on agricultural lands. These regulations are enforced by the Sacramento County Agricultural Commissioner's office. Specific regulations tend to vary for each pesticide, its method of application, and use. However, sections 6600 and 6614 have some general regulations relating to the application of pesticide. Section 6600 describes the standards of care that shall be used when applying pesticides. Standards include using equipment that is in good condition, performing pest control in a careful manner, properly applying pesticides, and exercising reasonable precautions to avoid contamination of the environment. Section 6614 requires that non-target crops, animals, or public or private property shall not be damaged by pesticide application.

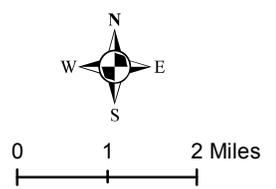


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Legend

-  Williamson Act Parcels
-  Highways
-  Waterways
-  City Limits
-  Policy Area
-  County Boundary



Data Source: City of Sacramento, 2012 and Department of Conservation, 2009

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Additionally, Sections 3482.5 and 3482.6 protect the right-to-farm in California by stating that agricultural activity and operations are not considered a nuisance due to any changed condition in or about the locality, after it has been in continuous operation for more than three years if it was not a nuisance at the time it began. Section 3482.6 does not preclude a City, County, or other political subdivision of this state, acting within its constitutional or statutory authority and not in conflict with other provisions of State law, from adopting an ordinance that allows notification to a prospective homeowner that the dwelling is in close proximity to an agricultural processing activity, operation, facility, or appurtenances. Many jurisdictions that have active agricultural activities do adopt local right-to-farm ordinances.

Williamson Act

The California Land Conservation Act of 1965 (or Williamson Act) (California Government Code section 51200) recognizes the importance of agricultural land as an economic resource that is vital to the general welfare of society. The enacting legislation declares that the preservation of a maximum amount of the limited supply of agricultural land is necessary to the conservation of the state's economic resources, and is necessary not only to the maintenance of the agricultural economy of the state, but also for the assurance of adequate, healthful, and nutritious food for future residents of the state and the nation.

Intended to assist the long-term preservation of prime agricultural land in the state, Williamson Act contracts provide the agricultural landowner with a protection against property tax increases in exchange for keeping the land in agricultural use. When under contract, the landowner no longer pays property tax for an assessed valuation based upon the property's urban development potential. The Williamson Act stipulates that, for properties under contract, "the highest and best use of such land during the life of the contract is for agricultural uses." Therefore, property under a contract is assessed and taxed based upon its agricultural value.

The Open Space Subvention Act (OSSA) was enacted on January 1, 1972 (Government Code section 16140 et seq.) to provide for the partial replacement of local property tax revenue foregone by local jurisdictions as a result of participation in the Williamson Act. OSSA authorized participating local governments to receive annual payment on the basis of the number of acres and quality based on soil type and agricultural productivity (California Department of Conservation 2013). Since 2009, State budget conditions have constrained the funds available for OSSA payments, including complete elimination of OSSA funds from the 2011 and 2012 State budgets.

Williamson Act contracts remain in effect for 10 years unless the property owner files for a notice of non-renewal with the County (California Department of Conservation 2007).

The Williamson Act also addresses "compatible" uses. In section 51231, the Williamson Act states that "the board or council, by resolution, shall adopt rules governing the administration of agricultural preserves...Rules related to compatible uses shall be consistent with the provisions of section 51238.1." Section 51238.1 states the following:

- a) Uses approved on contracted lands shall be consistent with all of the following principles of compatibility:

The use will not significantly compromise the long-term productive agricultural capability of the subject contracted parcel or parcels or on other contracted lands in agricultural preserves.

The use will not significantly displace or impair current or reasonably foreseeable agricultural operations on the subject contracted parcel or parcels or on other contracted lands in agricultural preserves.

The use will not result in the significant removal of adjacent contracted land from agricultural or open-space use.

Local

City of Sacramento Comprehensive Zoning Ordinance

The City of Sacramento Comprehensive Zoning Ordinance (Sacramento City Code Title 17 or Zoning Ordinance) is intended to encourage the most appropriate use of land, conserve, stabilize, and improve the value of property, provide adequate open space for recreational, aesthetic, and environmental amenities, and control the distribution of population to promote health, safety, and the general welfare of the population of the city. To achieve this goal, the Zoning Ordinance regulates the use of land, buildings, or other structures for residences, commerce, industry, and other uses required by the community. The City's two agriculture-open space zoning classifications are defined below.

- A: Agricultural Zone: This is an agricultural zone restricting the use of land primarily to agriculture and farming. It is also considered an open space zone. Property in this zone will be considered for reclassification when proposed for urban development which is consistent with the general plan.
- A-OS: Agriculture-Open Space Zone: This is an exclusive agricultural zone designed for the long-term preservation of agricultural and open space land. This zone is designated to prevent the premature development of land in this category to urban uses. The maximum building height is 50 feet.

Within the Policy Area there are 2,072 acres zoned as Agricultural (A) and 2,189 acres zoned as Agriculture-Open Space (A-OS).

Natomas Basin Habitat Conservation Plan

The Natomas Basin Habitat Conservation Plan (NBHCP) seeks "to promote biological conservation in conjunction with economic and urban development within the Permit Areas." Some species identified in and protected by the NBHCP rely on agricultural activities to sustain their populations. Figure 6-3 in Section 6.2, Biological Resources, shows the location of the NBHCP area. For a complete description of the NBHCP, please refer to page 6-34 in Section 6.2 of this report.

Findings

- According to the 2010 FMMP maps, there are approximately 5,400 acres of farmland in the Policy Area.
- Remaining agricultural land is concentrated in the northern and southern reaches of the Policy Area.
- There are no properties under Williamson Act contract in the Policy Area.

6.2 Biological Resources

Introduction

This section identifies major plant and animal resources within the Policy Area. Significant biological resources in the Policy Area include species listed as threatened or endangered, proposed for Federal and/or State listing as threatened or endangered, or any species identified as a candidate, sensitive, or special status species in local or regional plans, policies or regulations, or by the California Department of Fish and Wildlife (CDFW; formerly the California Department of Fish and Game) or United States Fish and Wildlife Service (USFWS). Additionally, sensitive habitats, habitat for any of the species described above, and wetlands or other waters under the jurisdiction of the U.S. Army Corps of Engineers (USACE) under Section 404 of the Clean Water Act, are considered significant biological resources.

Information for this section is based on data obtained from the CDFW's California Natural Diversity Database (2007), the California Native Plant Society's (CNPS) Electronic Inventory of Rare and Endangered Vascular Plants of California (2007), USFWS Endangered and Threatened Species list, United States Geological Survey's (USGS) 7.5-minute quadrangles for Taylor Monument, Rio Linda, Citrus Heights, Sacramento West, Sacramento East, Carmichael, Clarksburg, Florin, and Elk Grove, species information on CDFW's website, and a variety of environmental documents including the Natomas Basin Habitat Conservation Plan (NBHCP; City of Sacramento 2003), Panhandle Annexation and PUD Draft EIR (City of Sacramento 2007), Railyards Specific Plan Draft EIR (PBS&J 2007), various environmental documents generated for the proposed Delta Shores Development, and the Final Draft Bufferlands Master Plan (Jones & Stokes 2000).

Existing Conditions

Habitats

Prior to human development, the natural habitats within the Policy Area included perennial grasslands, riparian woodlands, oak woodlands, and a variety of wetlands including vernal pools, seasonal wetlands, freshwater marshes, ponds, streams, and rivers. Over the last 150 years, agriculture, irrigation, flood control, and urbanization have resulted in the loss or alteration of much of the natural habitat within the Policy Area. Non-native annual grasses have replaced the native perennial grasslands, many of the natural streams have been channelized, much of the riparian and oak woodlands have been cleared, and most of the marshes have been drained and converted to agricultural or urban uses.

Though the majority of the Policy Area is developed with residential, commercial, and other urban development, valuable plant and wildlife habitat still exists. These natural habitats are located primarily outside the city boundaries in the northern, southern and eastern portions of the Policy Area, but also occur within the Policy Area along river and stream corridors and on a number of undeveloped parcels. Habitats that are present in the Policy Area include annual grasslands, riparian woodlands, oak woodlands, riverine, ponds, freshwater marshes, seasonal wetlands, and vernal pools. These habitats and their general locations within the Policy Area are discussed briefly below.

Annual Grassland

Annual grassland habitat occurs throughout the undeveloped portions of the Policy Area, primarily as a distinct vegetation community, but also as an understory to oak and riparian woodland habitats. The largest concentration of annual grassland occurs in the northern portion of the Policy Area – in North Sacramento and North Natomas – but significant concentrations are also present in south Sacramento and in the eastern portion of the Policy Area. This habitat occupies (and has largely replaced through competition) what was once native perennial bunch grass habitat. Annual grassland species commonly observed in the Policy Area include ripgut brome (*Bromus diandrus*), soft chess (*Bromus mollis*), wild oat (*Avena fatua*), Italian rye (*Lolium multiflorum*), Mediterranean barley (*Hordeum marinum* spp. *gussoneanum*), foxtail barley (*Hordeum murinum* spp. *leporinum*), hairgrass (*Aira caryophylla*) and medusahead grass (*Taeniatherum caput-medusae*). Some of the more common forbs found in these annual grasslands include cutleaf geranium (*Geranium dissectum*), red stem filaree (*Erodium botrys*), clover (*Trifolium* spp.), bur clover (*Medicago polymorpha*), fiddle-neck (*Amsinckia menziesii*), curly dock (*Rumex crispus*), wild radish (*Raphanus sativa*), wild mustard (*Brassica* spp.), star thistle (*Centaurea solstitialis*), milk thistle (*Silybum marianum*), bull thistle (*Cirsium vulgare*), blue dicks (*Dichelostemma capitatum*), spikeweed (*Hemizonia fitchii*), and vinegar weed (*Trichostema lanceolatum*).

Annual grasslands are important habitats to a variety of wildlife, including small rodents such as deer mice (*Peromyscus maniculatus*) and California voles (*Microtus californicus*) that feed on the abundance of grass seeds that this habitat provides. Other small mammals that use this habitat include species such as Botta's pocket gopher (*Thomomys bottae*), cottontail (*Sylvilagus audubonii*), black-tail hare (*Lepus californicus*), and California ground squirrel (*Spermophilus beecheyi*). These small mammals in turn provide food for a variety of predators including mammals such as the coyote (*Canis latrans*), gray fox (*Urocyon cinereoargenteus*), bobcat (*Lynx rufus*) and birds such as the red-tailed hawk (*Buteo jamaicensis*), red-shouldered hawk (*Buteo lineatus*), barn owl (*Tyto alba*), American crow (*Corvus brachyrhynchos*), and loggerhead shrike (*Lanius ludovicianus*). Other bird species that may occur in this habitat include the prairie falcon (*Falco mexicanus*), western meadowlark (*Sturnella neglecta*), scrub jay (*Aphelocoma coerulescens*), and western bluebird (*Sialia mexicana*). Frequently encountered reptile species in annual grasslands include the western yellow-bellied racer (*Coluber constrictor mormon*), northern Pacific rattlesnake (*Crotalus oreganus oreganus*), Pacific gopher snake (*Pituophis catenifer catenifer*), California kingsnake (*Lampropeltis getulua californiae*), western terrestrial garter snake (*Thamnophis elegans*), western fence lizard (*Sceloporus occidentalis*), southern alligator lizard (*Elgaria multicarinatus*), and Gilbert's skink (*Eumeces gilberti*). Annual grasslands also frequently support seasonal wetlands and vernal pools that provide important breeding sites for the Pacific tree frog (*Pseudacris regilla*) and western toad (*Bufo boreas*).

Special-status species that use annual grasslands for foraging and/or nesting include the Swainson's hawk (*Buteo swainsoni*), burrowing owl (*Athene cunicularia*), and white-tailed kite (*Elanus caeruleus*). Where vernal pools or seasonal wetlands are a component, grasslands provide habitat for special-status species such as the Federally-listed vernal pool fairy shrimp (*Branchinecta lynchi*) and vernal pool tadpole shrimp (*Lepidurus packardii*).

Ruderal Habitats

Ruderal communities within the Policy Area are characterized by plant species adapted to continued disturbance (e.g., mowing, spraying, grading) and are largely composed of non-native annuals that have displaced the more conservative, native perennial species. Ruderal assemblages of species are

found throughout the Policy Area, along the boundaries of active construction zones where recent grading or stockpiling of soils had taken place, in vacant lots, and in agricultural areas that are no longer in production. Non-native species typically observed within these areas include common sow-thistle (*Sonchus oleraceus*), white sweet clover (*Melilotus officinalis*), rip-gut brome (*Bromus diandrus*), wild oat, Bermuda grass (*Cynodon dactylon*), foxtail fescue (*Festuca megalura*), Italian rye-grass (*Lolium multiflorum*), wild radish (*Raphanus raphanistrum*), bur-clover, common plantain (*Plantago major*), milk thistle, common groundsel (*Senecio vulgaris*), cudweed (*Gnaphalium* spp.), filaree, spring vetch (*Vicia lathyroides*), common knotweed (*Polygonum arenastrum*), prickly lettuce (*Lactuca serriola*), red clover (*Trifolium pretense*), shepherd's purse (*Capsella bursa-pastoris*), and bull thistle. Native species observed included fiddleneck (*Amsinckia* spp.), horseweed (*Conyza canadensis*), miniature lupine (*Lupinus bicolor*), and toad-rush (*Juncus bufonius*).

Although not as ecologically diverse as other habitat types, ruderal communities are used by many wildlife species for all or part of their life cycle. Mammals typically found in these communities include Botta's pocket gopher (*Thomomys bottae*), California vole, black-tailed hare, California ground squirrel, and western harvest mouse (*Reithrodontomys megalotis*). These rodent populations provide prey for mammalian predators, such as coyote, and avian predators such as American kestrel (*Falco sparverius*), red-tailed hawk, barn owl, and great horned owl (*Bubo virginianus*). Additional species found in this habitat type include killdeer (*Charadrius vociferous*), American crow, mourning dove (*Zenaida macroura*), savannah sparrow (*Passerculus sandwichensis*), western meadowlark, gopher snake, and striped skunk (*Mephitis mephitis*).

Riparian

Riparian woodland and scrub habitats are generally associated with rivers, low gradient streams, floodplains, and occasionally ponds and canals. The composition of species in riparian woodland communities is highly variable and dependent on geographic location, elevation, substrate, and amount of flow in the watercourse. This habitat can be found along many of the perennial and ephemeral drainages and other waterways in the Policy Area, but the largest expanses of riparian vegetation occur along the American and Sacramento rivers, Natomas Main Drainage Canal (NEMDC) (also known as historic Steelhead Creek), Arcade Creek, and lower Morrison Creek/Beach Lake. The vegetation of the riparian woodland habitat is variable and often structurally diverse. Trees characteristic of riparian habitats in the Policy Area include valley oak (*Quercus lobata*), Fremont cottonwood (*Populus fremontii*), California black walnut (*Juglans californica*), white alder (*Alnus rhombifolia*), willow (*Salix* spp.), and Oregon ash (*Fraxinus latifolia*). Typical understory include shrubs, box elder (*Acer negundo*), button willow (*Cephalanthus occidentalis*), California buckeye (*Aesculus californicus*), coyote brush (*Baccharis pilularis*), California grape (*Vitis californicus*), Himalayan blackberry (*Rubus discolor*), and poison oak (*Toxicodendron diversilobum*). The herbaceous species occurring in the understory include seashore vervain (*Verbena litoralis*), bedstraw (*Galium* spp.), sedges (*Carex* spp.), umbrella sedges (*Cyperus* spp.), rushes (*Juncus* spp.), spike rush (*Eleocharis macrostachya*), and a variety of annual grasses.

Riparian habitats provide abundant food, cover, and breeding sites for wildlife in close proximity to water. These factors and the structural diversity of riparian woodland are largely responsible for the high productivity of this habitat type. Characteristic bird species in this habitat include the California quail (*Callipepla californica*), mourning dove, Nuttall's woodpecker (*Picoides nuttallii*), black phoebe (*Sayornis nigricans*), spotted towhee (*Pipilo maculatus*), California towhee (*Pipilo crissalis*), and song sparrow (*Melospiza melodia*). A number of these species nest or roost in riparian woodlands and feed in adjacent habitat, such as annual grassland and agricultural fields. Riparian woodlands also provide important feeding, resting, and nesting habitat for neotropical migrant songbirds such as

warblers, vireos, grosbeaks, and flycatchers. Mammals found within riparian habitat may include the raccoon (*Procyon lotor*), deer mouse (*Peromyscus maniculatus*), broad-footed mole (*Scapanus latimanus*), striped skunk, opossum (*Didelphis virginianus*), and gray fox. Amphibians and reptiles likely to occur in this community include the western toad, Pacific tree frog, common king snake (*Lampropeltis getulus californiae*), valley garter snake (*Thamnophis sirtalis fitchii*), and Gilbert's skink. Special-status species that forage and/or nest in riparian habitats include the Swainson's hawk, Cooper's hawk (*Accipiter cooperii*), yellow warbler (*Dendroica petechia*), white-tailed kite, and yellow-breasted chat (*Icteria virens*).

Oak Woodlands

Oak woodlands are very limited in the Policy Area and occur only in upland areas adjacent to (or integrated with) riparian woodland habitat. The largest concentration of oak woodland is found in North Sacramento, but the habitat is also still present to a limited extent in the southwestern portion of the Policy Area near Beach Lake and the Sacramento Regional Wastewater Treatment Plant buffer lands. Plant species composition in this habitat can be variable, but is typically dominated by an overstory of valley oaks, and/or interior live oaks (*Quercus wislizenii*), with blue oak (*Q. douglasi*), California buckeye, California black walnut, and foothill pine (*Pinus sabiniana*). Understory plant species include poison oak, toyon (*Heteromeles arbutifolia*), coyote brush, Himalayan blackberries, and a variety of annual grasses such as wild oats, wild rye, and foxtail barley.

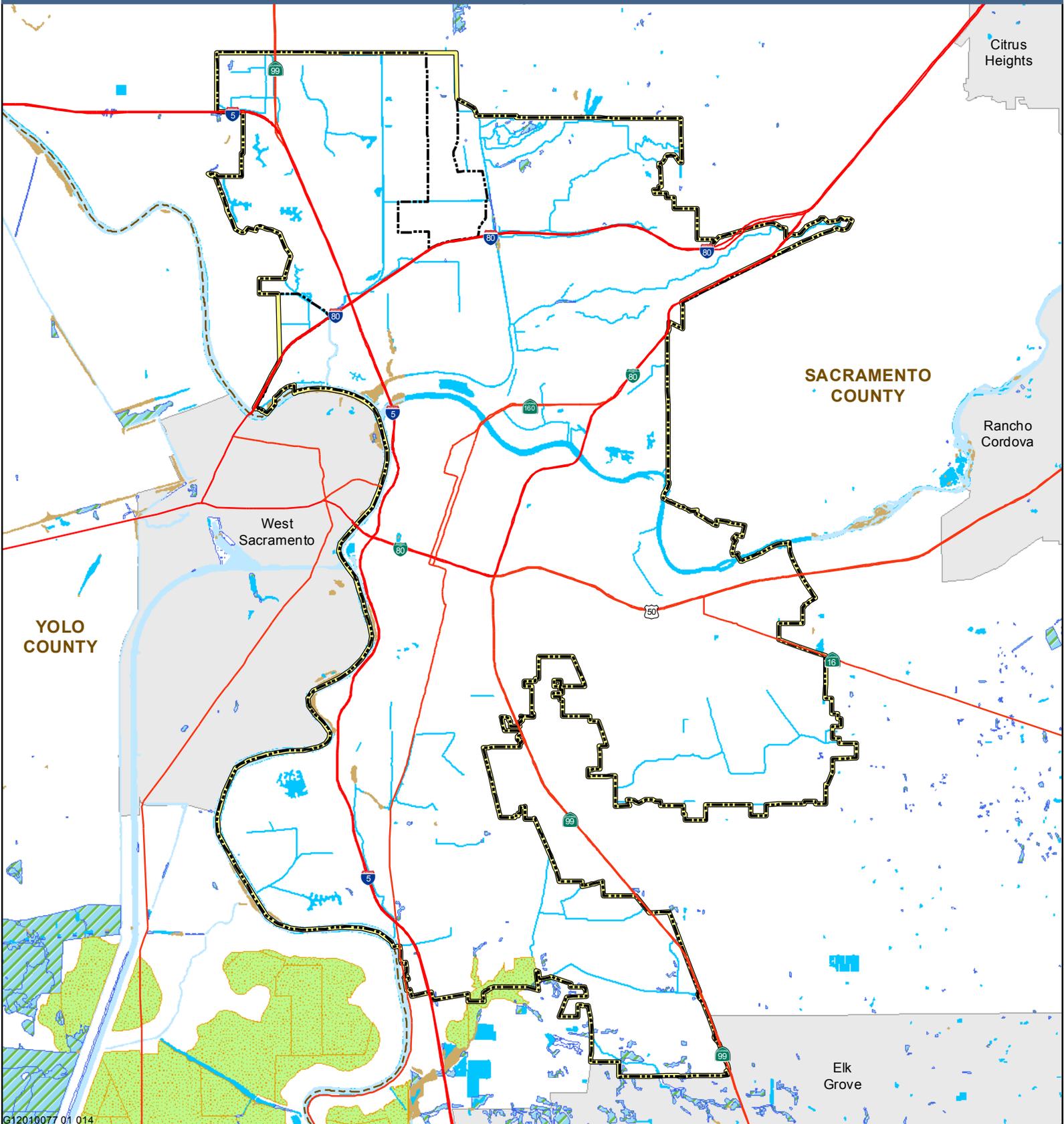
Oak woodlands provide a diversity of wildlife habitat. Acorns are an essential food resource for many wildlife species including the western gray squirrel (*Sciurus griseus*), California ground squirrel, black-tailed deer (*Odocoileus hemionus*), deer mouse, dusky-footed woodrat (*Neotoma fuscipes*), acorn woodpecker (*Melanerpes formicivorus*), northern flicker (*Colaptes auratus*), and western scrub jay. The abundant insect life found in the bark and foliage of oaks provide food for bird species such as the red-breasted nuthatch (*Sitta canadensis*), bushtit (*Psaltriparus minimus*), plain titmouse (*Parus inornatus*), and ash-throated flycatcher (*Myiarchus cinerascens*). Avian predators that nest and forage in oak woodland habitat include the great horned owl, western screech-owl (*Otus kennicotti*), red-tailed hawk, and red-shouldered hawk (*Buteo lineatus*).

Mammals commonly found in this habitat include the raccoon, striped skunk, cottontail, and gray fox. A variety of woodpecker species nest in the cavities of oak trees, as do house wrens (*Troglodytes aedon*), western bluebirds (*Sialia mexicana*), and American kestrels that use abandoned woodpecker cavities. Typical amphibian and reptile species found in this habitat include the California newt (*Taricha torosa*), ensatina (*Ensatina eschscholtzi*), California slender salamander (*Batrachoseps attenuatus*), sharp-tailed snake (*Contia tenuis*), ringneck snake (*Diadophis punctatus*), Pacific tree frog, western terrestrial garter snake (*Thamnophis elegans*), Gilbert's skink, western fence lizard, and southern alligator lizard. Special-status species using oak woodlands for foraging and/or nesting include Cooper's hawk, white-tailed kite, and loggerhead shrike.

Wetlands

Figure 6-3 shows wetlands within the Policy Area, and different wetland types are described below. Due to the small scale of the map, wetlands still present in the city are either barely visible or not visible on this map due to their small size. A map with a larger scale is available at the City Development Services Department.

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Legend

Farmed Wetlands	Seasonal Wetlands	Highways
Lakes and Ponds	Tidal Salt, Brackish Freshwater Marsh	Policy Area
Open Water	Riparian Woodland	City Limits
		County Boundary

0 1 2 Miles

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Rivers, Creeks and Canals. The American and Sacramento rivers, their tributaries, and other waterways in the Policy Area are important to local wildlife, not only for the habitat they provide, but for the connectivity they create between otherwise isolated areas of wildlife habitat, acting as corridors through which wildlife species can migrate. Many of the creeks in the Policy Area have been at least partially channelized and lined with concrete, and are maintained such that riparian and marsh vegetation is generally cleared on an annual basis. Special-status species that use rivers, creeks and canals in the Policy Area include Swainson's hawk, giant garter snake (*Thamnophis gigas*), herons and egrets.

Freshwater Marsh. Freshwater marsh habitat is typically associated with the margins of rivers, streams, or ponds, but can form anywhere where shallow, slow moving perennial water is present. In the Policy Area, freshwater marsh occurs primarily along portions of the American River, NEMDC, Arcade Creek, lower Morrison Creek, and Beach Lake. Plant species common to freshwater marsh habitats in the Policy Area include cattails (*Typha latifolia*), tule (*Scirpus californicus*), sedges and umbrella sedges, rushes, water primrose (*Ludwigia peploides*), water smartweed (*Polygonum amphibium*), parrot feather (*Myriophyllum aquaticum*), pennyroyal (*Mentha pulegium*), seashore vervain, common yellow monkey flower (*Mimulus guttatus*), and smooth cocklebur (*Xanthium strumarium*). Freshwater marshes provide important breeding and foraging habitat for a wide variety of local wildlife, such as herons and egrets, muskrats, raccoon, red-winged blackbirds and a wide variety of waterfowl. Special-status species that use freshwater marsh habitats in the Policy Area include giant garter snake, northern harrier (*Circus cyaneus*), tricolor blackbird (*Agelaius tricolor*), Sanford's arrowhead (*Sagittaria sanfordii*), and rose mallow (*Hibiscus lasiocarpus*).

Vernal Pools and Seasonal Wetlands

Grasslands throughout much of the Policy Area historically supported vernal pools and seasonal wetlands. However, much of this habitat has been lost with development of the city. The largest remaining concentration of vernal pool and seasonal wetland habitat is in North Sacramento and Natomas, though significant areas also occur in the Airport-Meadowview and south Sacramento areas and in undeveloped, eastern portions of the Policy Area.

Vernal pools are ephemeral wetlands that form in shallow depressions underlain by a substrate near the surface that restricts the percolation of water. These depressions fill with rainwater during the fall and winter and can remain inundated until spring or early summer, sometimes filling and emptying numerous times during the rainy season. A flowering community, dominated by characteristic wetland plants, differentiates vernal pools from other seasonal wetlands. Vernal pool plant species likely to occur within the Policy Area include the winged water-starwort (*Callitriche marginata*), annual hairgrass (*Deschampsia danthonioides*), horned downingia (*Downingia ornatissima*), coyote thistle (*Eryngium vaseyi*), bractless hedge-hyssop (*Gratiola ebracteata*), slender popcorn flower (*Plagiobothrys stipitatus*), spine-fruit butter-cup (*Ranunculus bonariensis*), and purslane speedwell (*Veronica peregrina*).

Seasonal wetlands are distinguished from vernal pools in that they may not be inundated for as long as vernal pools and generally contain a greater abundance of facultative and grassy species, and few, if any vernal pool endemic species. The distinction between the two types is often unclear; the final determination of the type of wetland can often be dependent upon the verification of the USACE. Both vernal pools and seasonal wetlands provide habitat for a number of plant and animal species listed as threatened or endangered, or that have other special status that requires their protection. The most well known are the vernal pool crustaceans, such as vernal pool fairy shrimp (*Branchinecta lynchi*) and vernal pool tadpole shrimp (*Lepidurus packardii*), along with a variety of plant species characteristically occurring in vernal pools.

Ornamental

Ornamental landscaping consists of areas supporting introduced or non-native trees, shrubs, flowers, and turf grass. Ornamental landscaping occurs in green belts, parks, and horticultural plantings throughout the Policy Area. Typical species include London Plane tree (*Platanus acerifolia*), European hackberry (*Celtis australis*), ginkgo (*Ginkgo biloba*), sweetgum (*Liquidambar styraciflua*), pepper trees (*Schinus molle*), and Canary Island date palm (*Phoenix canariensis*). Despite their highly-manicured and intensively-maintained appearance, urban landscapes offer local wildlife populations a surprising variety of habitat types for exploiting food, nesting, and cover resources. Wildlife species that occur throughout ornamental landscaped areas include raccoon, black-tailed hare, opossum, Anna's humming bird (*Calypte anna*), yellow-billed magpie (*Pica nuttalli*), northern flicker, dark-eyed junco (*Junco hyemalis*), mallard (*Anas platyrhynchos*), wood duck (*Aix sponsa*), great blue heron (*Ardea herodias*), Canada goose (*Branta canadensis*), American robin (*Turdus migratorius*), and western scrub jay, red-tailed hawk, and red-shouldered hawk.

Special-Status Species

The following section addresses special-status species observed, reported, or having the potential to occur in the Policy Area. These resources include plant, and wildlife species that have been afforded special-status and/or recognition by Federal and State resource agencies, as well as private conservation organizations and special interest groups, such as the CNPS. In general, the principal reason an individual taxon (species, subspecies, or variety) is given such recognition is the documented or expected decline or limitation of its population size or geographical extent and/or distribution that results, in most cases, from habitat loss.

For the purposes of this section, special-status species include:

- Species listed, proposed, or candidate species for listing as Threatened or Endangered by the USFWS pursuant to the Federal Endangered Species Act (FESA) of 1969, as amended;
- Species listed as Rare, Threatened, or Endangered by the CDFW pursuant to the California Endangered Species Act (CESA) of 1970, as amended;
- Species designated as Fully Protected under Sections 3511 (birds), 4700 (mammals), and 5050 (reptiles and amphibians) of the California Fish and Game Code;
- Species designated by the CDFW as California Species of Concern;
- Plant species listed as Category 1B and 2 by the CNPS; and
- Species not currently protected by statute or regulation, but considered rare, threatened or endangered under CEQA (section 15380).

Special status species that are known to occur in the Policy Area, or suspected to occur based on the natural habitats present are listed in Table 6-3. Figure 6-4 shows results of a search of the California Natural Diversity Database (CNDDDB).

Table 6-3 Special-Status Species Potentially Occurring in the Policy Area

<i>Scientific Name</i>	<i>Common Name</i>	<i>Status</i>	<i>Habitat</i>
Plants			
<i>Astragalus tener</i> var. <i>tener</i>	Alkali milk-vetch	1B.2	Associated with vernal pools, playas, and valley grasslands on adobe clay and/or alkaline soils.
<i>Atriplex depressa</i>	Brittlescale	1B.2	Associated with chenopod scrub, meadows, playas, valley grassland, vernal pools. Usually in alkali scalds or alkali clay in meadows or annual grassland.
<i>Atriplex joaquiniana</i>	San Joaquin spearscale	1B.2	Occurs in chenopod scrub, alkali meadow, and valley and foothill grassland.
<i>Balsamorhiza macrolepis</i> var. <i>macrolepis</i>	Big-scale balsamroot	1B.2	Occurs in grassland habitat.
<i>Chloropyron molle</i> ssp. <i>hispidum</i>	Hispid bird's beak	1B.1	Occurs in grassland and vernal pool habitats.
<i>Chloropyron palmatum</i>	Palmate-bracted bird's-beak	FE, CE, 1B.1	Occurs in chenopod scrub, and valley and foothill grassland habitats; usually on alkaline clay.
<i>Downingia pusilla</i>	Dwarf downingia	2.2	Typically occurs in vernal pools, vernal swales, and occasionally other seasonal wetlands. Restricted in distribution as a result of habitat conversion and associated disturbance. Habitat occurs primarily in higher elevation portions of the Policy Area such as North Sacramento, and portions of East Sacramento and South Sacramento.
<i>Gratiola heterosepala</i>	Boggs Lake hedge-hyssop	CE, 1B.2	Typically occurs in vernal pools, vernal swales, and occasionally other seasonal wetlands. Restricted in distribution as a result of habitat conversion and associated disturbance. Habitat occurs primarily in higher elevation portions of the Policy Area such as North Sacramento, and portions of East Sacramento and South Sacramento.
<i>Hibiscus lasiocarpus</i> var. <i>occidentalis</i>	Woolly rose-mallow	2.2	Perennial herb that grows from 3 to 6 feet in height and has white or rose-colored flowers. Associated with wet banks and marshes in the Policy Area. Known to occur along the American River in the Policy Area, but could also occur elsewhere in areas of suitable habitat.
<i>Juglans hindsii</i>	Northern California black walnut	1B.1	Associated with riparian forest and woodland habitats. Few extant native stands remain. Widely naturalized from rootstock plants. Native stands are now only known to occur in Napa and Contra Costa Counties.
<i>Juncus leiospermus</i> var. <i>ahartii</i>	Ahart's dwarf rush	1B.2	Typically occurs in vernal pools, vernal swales, and occasionally other seasonal wetlands. Restricted in distribution as a result of habitat conversion and associated disturbance. Habitat occurs primarily in higher elevation portions of the Policy Area such as North Sacramento, and portions of East Sacramento and South Sacramento.
<i>Legenere limosa</i>	Legenere	1B.1	Typically occurs in vernal pools, vernal swales, and occasionally other seasonal wetlands. Restricted in distribution as a result of habitat conversion and associated disturbance. Habitat occurs primarily in higher elevation portions of the Policy Area such as North Sacramento, and portions of East Sacramento and South Sacramento.
<i>Lepidium latipes</i> var. <i>heckardii</i>	Heckard's pepper-grass	1B.2	Valley and foothill grassland and vernal pools on alkaline soils.

Table 6-3 Special-Status Species Potentially Occurring in the Policy Area

Scientific Name	Common Name	Status	Habitat
Navarretia myersii ssp. myersii	Pincushion navarretia	1B.1	Typically occurs in vernal pools, vernal swales, and occasionally other seasonal wetlands. Restricted in distribution as a result of habitat conversion and associated disturbance. Habitat occurs primarily in higher elevation portions of the Policy Area such as North Sacramento, and portions of East Sacramento and South Sacramento.
Orcuttia tenuis	Slender orcutt grass	FT, CE, 1B.1	Typically occurs in vernal pools, vernal swales, and occasionally other seasonal wetlands. Restricted in distribution as a result of habitat conversion and associated disturbance. Habitat occurs primarily in higher elevation portions of the Policy Area such as North Sacramento, and portions of East Sacramento and South Sacramento.
Orcuttia viscida	Sacramento orcutt grass	FE, 1B.1	Typically occurs in vernal pools, vernal swales, and occasionally other seasonal wetlands. Restricted in distribution as a result of habitat conversion and associated disturbance. Habitat occurs primarily in higher elevation portions of the Policy Area such as North Sacramento, and portions of East Sacramento and South Sacramento.
Sagittaria sanfordii	Sanford's arrowhead	1B.2	Perennial herb that occurs in marshes, swamps and shallow margins of other waters. Known to occur along the American River in the Policy Area, but could also occur elsewhere in areas of suitable habitat.
Invertebrates			
Branchinecta lynchi	Vernal pool fairy shrimp	FT	Small crustaceans adapted to survive the annual flooding and drying of vernal pools and other seasonal wetlands in valley or foothill grasslands by hatching from encysted eggs embedded in the soil in the bottom of the pools when they fill with rainwater. The dormant eggs are protected by thick outer coverings that resist cold, heat, and desiccation. More likely to occur in undeveloped, higher-elevation portions of the Policy Area such as North Sacramento, and portions of East Sacramento and South Sacramento.
Desmocerus californicus dimorphus	Valley elderberry longhorn beetle	FT (under review for de-listing)	A small beetle less than an inch long that is dependent upon elderberry shrubs, which are found primarily along the American River and Sacramento River riparian corridors, but can also be found in isolated occurrences throughout the Policy Area. The Policy Area includes critical habitat north of the American River.
Lepidurus packardii	Vernal pool tadpole shrimp	FE	Small crustaceans adapted to survive the annual flooding and drying of vernal pools and other seasonal wetlands in valley or foothill grasslands by hatching from encysted eggs embedded in the soil in the bottom of the pools when they fill with rainwater. The dormant eggs are protected by thick outer coverings that resist cold, heat, and desiccation. More likely to occur in undeveloped, higher-elevation portions of the Policy Area such as North Sacramento, and portions of East Sacramento and South Sacramento.
Fish			

Table 6-3 Special-Status Species Potentially Occurring in the Policy Area

<i>Scientific Name</i>	<i>Common Name</i>	<i>Status</i>	<i>Habitat</i>
Archoplites interruptus	Sacramento Perch	CSC	Historically found in the sloughs, slow-moving rivers, and lakes of the central valley. Currently present in the American and Sacramento rivers and their tributaries. True native populations (as opposed to re-introduced populations) now only exist at Clear Lake in Lake County and portions of Alameda Creek in Alameda County. Prefer warm water. Aquatic vegetation is essential for young. Tolerant of a wide range of physio-chemical water conditions.
Acipenser medirostris	Green Sturgeon	FT, CSC	Long-lived anadromous species that migrates through the Sacramento River to spawning grounds in the Feather and upper Sacramento rivers. Occurs in low numbers in the San Francisco Estuary and Sacramento River. Thought to spawn in deep holes with fast moving water over cobble substrates. Larvae develop within freshwater systems, migrate downstream and remain in the estuaries for between one and four years before migrating to the ocean. Mature adults move into estuaries in the spring, and spawning adults continue into natal rivers in late spring/early summer. Post spawning adults return to the estuary before migrating back to the ocean in late fall. Sub-adult fish are also thought to enter estuaries during the summer and fall months. The Sacramento River adjacent to the Policy Area does not support spawning habitat for adult fish or rearing habitat for juveniles.
Hypomesus transpacificus	Delta smelt	FT, CE	Occurs in Sacramento-San Joaquin Delta most of the year. Spawns in tidally influenced freshwater wetlands and seasonally submerged uplands along the Sacramento River, downstream from its confluence with the American River. The nearest known spawning area for this species is in the Yolo Bypass, outside of the Policy Area to the west. Critical habitat for the species was designated in December 1994 and includes portions of the Policy Area along the Sacramento River (59 FR 65256).
Oncorhynchus mykiss	Central Valley steelhead	FT	Central Valley steelhead is an Evolutionarily Significant Unit that includes all naturally spawned populations of steelhead in the Sacramento and San Joaquin rivers, and their tributaries. Occurs in the Pacific Ocean for most of its life. Travels to clean gravel beds in the upper Sacramento and portions of the American River for spawning. Peak migration periods for adult fish in the Sacramento River are in mid-winter. Juvenile steelhead generally spend one to three years in freshwater before migrating to the ocean (Moyle 2002). While steelhead migrate along this section of the Sacramento and American rivers, the Policy Area does not support spawning habitat for adult fish, or rearing habitat for juveniles. The Sacramento River, American River, and NEMDC are critical habitat.

Table 6-3 Special-Status Species Potentially Occurring in the Policy Area

Scientific Name	Common Name	Status	Habitat
Oncorhynchus tshawytscha	Central Valley spring run Chinook salmon	FT, CT	Occurs in the Pacific Ocean for most of its life. Travels to clean gravel beds in the upper Sacramento River and portions of the American River for spawning. Adult and juvenile Chinook may move through the Policy Area in transition between the ocean and spawning/rearing areas. Spring run Chinook enter the Sacramento River between March and September and move upstream into the headwaters, where they hold in pools until they spawn (between August and October). Juveniles emigrate mid-November through June; however, some juveniles spend a year in the streams and emigrate as yearlings the following October (Moyle 2002).
Oncorhynchus tshawytscha	Central Valley Winter run Chinook salmon	FE, CE	Occurs in the Pacific Ocean for most of its life. Travels to clean gravel beds in the upper Sacramento River and portions of the American River for spawning. Return to the upper Sacramento River between December and July, but delay spawning until the spring and summer (Moyle 2002). Juveniles spend five to nine months in the river and Sacramento-San Joaquin Estuary before entering the ocean. Adult and juvenile Chinook may move through the Policy Area in transition between the ocean and spawning/rearing areas. The Policy Area includes designated critical habitat (58 FR 33212).
Pogonichthys macrolepidotus	Sacramento splittail	CSC	Endemic to the lakes and rivers of the central valley, but now confined to the Delta, Suisun Bay, and associated marshes. Prefers slow-moving river sections and dead end sloughs. Requires flooded vegetation for spawning and foraging for young. Larvae remain in the shallow, weedy inshore areas near spawning sites and move into the deeper offshore habitat as they mature. Likely to be present in the American and Sacramento rivers, and their tributaries. The nearest significant breeding habitat lies outside the Policy Area in the Yolo Bypass.
Amphibians			
Spea hammondi	Western spadefoot	CSC	Breeds in seasonal wetlands and large vernal pools. Spends most of the year underground in adjacent upland areas.
Reptiles			
Actinemys marmorata	Western pond turtle	CSC	Associated with ponds, streams, rivers, marshes and canals with suitable basking sites and vegetative cover. Occurs in suitable habitat throughout the Policy Area; fairly common along the Sacramento and American rivers and the Steelhead Creek (NEMDC).
Phrynosoma coronatum frontale	California horned lizard	CSC	Associated with annual grassland, chaparral, saltbush scrub, alkali flats, oak woodland, riparian woodland, and coniferous forest. Requires open habitats with loose, fine (often sandy) soils.

Table 6-3 Special-Status Species Potentially Occurring in the Policy Area

<i>Scientific Name</i>	<i>Common Name</i>	<i>Status</i>	<i>Habitat</i>
Thamnophis gigas	Giant garter snake	FT, CT	Found in cattail and tule marshes, low gradient streams, rice fields, and canals. Habitat typically includes the following features: adequate water during the snake's active season (early-spring through mid-fall); presence of abundant emergent vegetation such as cattails and bulrushes for escape cover and foraging habitat during the active season; grassy banks and openings in waterside vegetation for basking; and higher elevation uplands adjacent to the aquatic habitat for cover and refuge from flood waters during the snake's dormant season in the winter (USFWS 2009). Aquatic habitat must also support prey species such as small fish and amphibians. Occurs mostly west of the Steelhead Creek (NEMDC), north of the American River, and west of Highway 99, south of the American River.
Birds			
Agelaius tricolor	Tricolor blackbird	CSC (nesting)	Associated with marshes, wet meadows, rice fields, and rangelands. Nest in dense stands of cattails, thickets of willows, blackberries, or tall herbs adjacent to open grasslands. Known to nest in Natomas, near the northern border of the Policy Area, and along Hwy-99 near the southeast corner of the Policy Area. Suitable nesting habitat also occurs along the American River corridor, Steelhead Creek (NEMDC), and along lower Morrison Creek and Beach Lake.
Athene cunicularia	Burrowing owl	CSC (burrow sites)	Residents in generally flat, open, dry grasslands, pastures, deserts, shrub lands, and in grass, forbs and open-shrub stages of pinyon-juniper and ponderosa pine habitats. Use communal ground squirrel and other small mammal burrows for nesting and cover, as well as artificial structures such as roadside embankments, levees, and berms. Fairly tolerant of human activity near their burrows as long as suitable foraging habitat exists nearby. Known burrowing owl colonies are present along railroad right-of-ways, and natural and artificial canals near foraging habitat, at several locations on the Cosumnes River College campus and in less-developed areas in northern, eastern, and southern portions of the Policy Area.
Buteo swainsoni	Swainson's hawk	CT	Nests in riparian trees and forages in open fields (annual grasslands, fallow fields, dry and irrigated pasture). Most nesting recorded along the Sacramento River.
Circus cyaneus	Northern harrier	CSC (nesting)	Nests in freshwater marsh and agricultural fields. Forages in marshes, grasslands and agricultural fields.

Table 6-3 Special-Status Species Potentially Occurring in the Policy Area			
<i>Scientific Name</i>	<i>Common Name</i>	<i>Status</i>	<i>Habitat</i>
Elanus leucurus	White-tailed kite	CFP (nesting)	Nests colonially in large trees adjacent to open grasslands for foraging. Feed on rodents, small reptiles, and large insects in fresh emergent wetlands, annual grasslands, pastures, and ruderal vegetation. Breed between February and October. The white-tailed kite can commonly be observed foraging in open grasslands throughout the Policy Area, but breeding sites are primarily located near riparian corridors along the Sacramento and American rivers.
Lanius ludovicianus	Loggerhead shrike	CSC (nesting)	Nests in woodlands adjacent to grassland foraging habitat.
Melospiza melodia	Song sparrow "Modesto" population	CSC (year round)	Associated with emergent freshwater marshes, irrigation canals, riparian scrub, riparian woodland.
Progne subis	Purple martin	CSC (nesting)	Inhabit open areas with an open water source nearby. Colonial cavity nesters in abandoned woodpecker holes, human-made nest boxes, or cavities in other structures such as bridges and overpasses. Once established at a nest location, martins usually come back to the same site every year. Adapt well in and around people, but are out-competed by starlings and sparrows in urban areas. Known to nest in North Sacramento under overpasses in the vicinity of the intersection of I-80 and Hwy 160, but could potentially occur in similar habitat throughout the Policy Area.
Riparia riparia	Bank swallow	CT	The smallest North American swallow, with a body length of about 4.75 inches. It nests in colonies and creates nests by burrowing into vertical bluffs and riverbanks with fine-textured soils. Breed in California from April to August and spend the winter months in South America. Most of California's remaining populations nest along the upper Sacramento River.
Mammals			
Antrozous pallida	Pallid bat	CSC	Roosts in crevices in caves, mines, large rock outcrops, under bridges, and in abandoned buildings. Forages on or near the ground in a wide variety of open habitats. Although potential habitat for these species is present within the Policy Area, none have been recorded. Distribution of special-status bat species is difficult to study and therefore poorly known. Bat colonies that may harbor some or all of these special-status species are present in several of the older buildings in downtown Sacramento and in human-made structures along the American and Sacramento rivers.

Table 6-3 Special-Status Species Potentially Occurring in the Policy Area

<i>Scientific Name</i>	<i>Common Name</i>	<i>Status</i>	<i>Habitat</i>
Corynorhinus townsendii townsendii	Pacific western big eared bat	CSC	Roosts in the open in large caves, abandoned mines, and buildings. Very sensitive to roost disturbance. Although potential habitat for these species is present within the Policy Area, none have been recorded. Distribution of special-status bat species is difficult to study and therefore poorly known. Bat colonies that may harbor some or all of these special-status species are present in several of the older buildings in downtown Sacramento and in human-made structures along the American and Sacramento rivers
Lasiurus blossevillii	Western red bat	CSC	Roosts primarily in tree foliage, especially in cottonwood, sycamore, and other riparian trees or orchards. Although potential habitat for these species is present within the Policy Area, none have been recorded. Distribution of special-status bat species is difficult to study and therefore poorly known. Bat colonies that may harbor some or all of these special-status species are present in several of the older buildings in downtown Sacramento and in human-made structures along the American and Sacramento rivers.
Taxidea taxus	American Badger	CSC	Principal habitat requirements include: sufficient prey base; friable soils; and relatively open, uncultivated ground such as grasslands. Prey primarily on burrowing rodents such as gophers, ground squirrels, marmots, and kangaroo rats. Badgers survive only in low numbers in peripheral parts of the Central Valley. The CNDDDB includes one recorded occurrence in the Policy Area near Power Inn and Fruitridge roads.

Notes:

Status =

Federal:

FE = Endangered, legally protected by the Federal Endangered Species Act (ESA)

FT = Threatened, legally protected by the Federal Endangered Species Act (ESA)

State:

CE = Endangered, legally protected by the California Endangered Species Act (CESA)

CFP = Fully Protected species (legally protected under Fish and Game Code)

CSC = California Species of Concern by DFG (no formal protection other than CEQA consideration)

CT = Threatened, legally protected by the California Endangered Species Act (CESA)

SA = Animal included on the CDFW's Special Animal List.

California Rare Plant Ranks (no formal protection other than CEQA consideration)

1B - Plant species that is rare or endangered in California or elsewhere.

2 - Plant species that is rare or endangered in California, but is more common elsewhere.

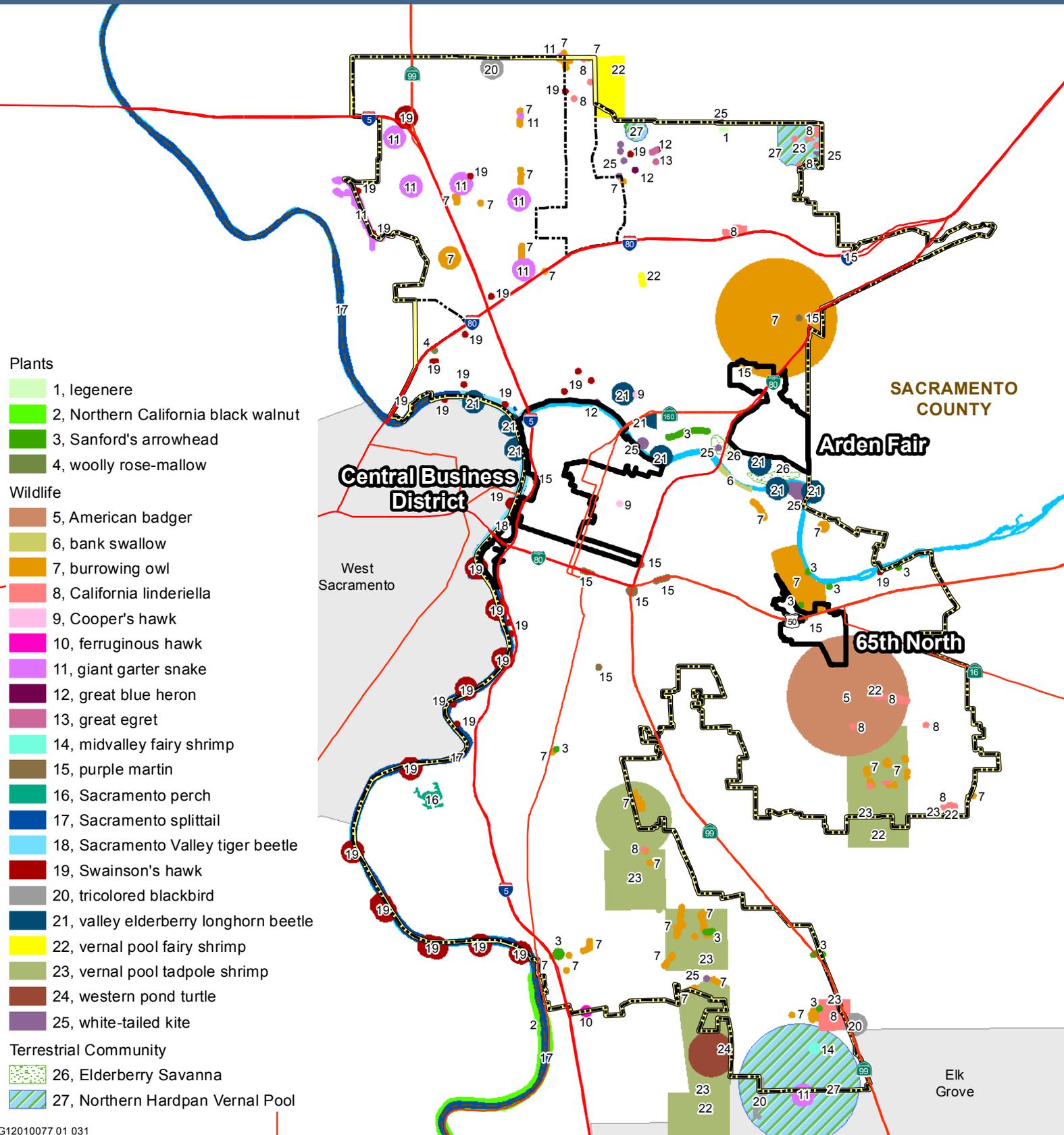
Threat code extensions:

.1 - Seriously endangered in California

.2 - Fairly endangered in California

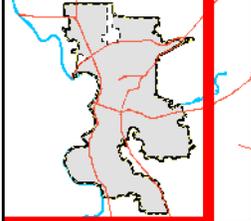
.3 - Not very endangered in California

Source: California Department of Fish and Game 2011, California Natural Diversity Database, 2007.



- Plants**
- 1, legenece
 - 2, Northern California black walnut
 - 3, Sanford's arrowhead
 - 4, woolly rose-mallow
- Wildlife**
- 5, American badger
 - 6, bank swallow
 - 7, burrowing owl
 - 8, California linderiella
 - 9, Cooper's hawk
 - 10, ferruginous hawk
 - 11, giant garter snake
 - 12, great blue heron
 - 13, great egret
 - 14, midvalley fairy shrimp
 - 15, purple martin
 - 16, Sacramento perch
 - 17, Sacramento splittail
 - 18, Sacramento Valley tiger beetle
 - 19, Swainson's hawk
 - 20, tricolored blackbird
 - 21, valley elderberry longhorn beetle
 - 22, vernal pool fairy shrimp
 - 23, vernal pool tadpole shrimp
 - 24, western pond turtle
 - 25, white-tailed kite
- Terrestrial Community**
- 26, Elderberry Savanna
 - 27, Northern Hardpan Vernal Pool

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Legend

- Tier 1 Priority Investment Areas
- Highways
- Waterways
- Policy Area
- City Limits
- County Boundary



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Regulatory Context

Federal

Federal Endangered Species Act

The FESA of 1973 provides legal protection for threatened and endangered plant and animal species, and requires definitions of critical habitat and development of recovery plans for specific species. Section 7 of FESA requires Federal agencies to make a finding on the potential to jeopardize the continued existence of any listed species potentially impacted by all Federal actions, including the approval of a public or private action, such as the issuance of a permit pursuant to Sections 10 and 404 of the Federal Clean Water Act (CWA). Section 9 of FESA prohibits the take of any member of an endangered species. Take is defined by the FESA as “...harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.” Section 10(a) of the FESA permits the incidental take of listed species if the take is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity.

Projects adversely affecting Federally-listed threatened or endangered species are required to obtain take permission from USFWS prior to project implementation. If a Federal agency is involved (i.e., if a wetlands permit is required, project has Federal funding, etc.), take permission can be obtained through FESA Section 7 consultation with USFWS. Consultation will determine whether the project would adversely impact a protected species or designated critical habitat and identify mitigation measures that would be required to avoid or reduce impacts on the species or its habitat. Following this consultation, the USFWS issues a Biological Opinion, which dictates the conditions of take that are allowed for the project. If no Federal agency is involved, project applicants are required to obtain an Incidental Take Permit through Section 10 of the FESA, which requires preparation of a Habitat Conservation Plan (HCP) and results in the issuance of an Incidental Take Permit.

Federal Migratory Bird Treaty Act

Pursuant to the Migratory Bird Treaty Act (MBTA) of 1918, as amended in 1972, Federal law prohibits the taking of migratory birds or their nests or eggs (16 U.S.C. Section 703). The Act covers the taking of any nests or eggs of migratory birds, except as allowed by permit pursuant to 50 CFR, Part 21. Disturbances causing nest abandonment and/or loss of reproductive effort (i.e., killing or abandonment of eggs or young) may also be considered a “take.” This regulation seeks to protect migratory birds and active nests. In 1972, the MBTA was amended to include protection for migratory birds of prey (e.g., raptors). The MBTA protects over 800 species including geese, ducks, shorebirds, raptors, songbirds, and many relatively common species, (i.e., white-crowned sparrow, mourning dove, and red-wing blackbird).

Federal Clean Water Act

The objective of the Clean Water Act (CWA) is to restore and maintain the chemical, physical, and biological integrity of the Nation's waters. Section 401 prohibits the discharge of any pollutant into the Nation's waters without a permit, and Section 402 establishes the permit program. Section 404 of the CWA regulates activities that result in discharge of dredged or fill material into waters of the United States.

Section 401

The State Water Resources Control Board (SWRCB) has authority over wetlands through Section 401 of the CWA, as well as the Porter-Cologne Act, California Code of Regulations Section 3831(k), and California Wetlands Conservation Policy. The CWA requires that an applicant for a Section 404 permit (to discharge dredged or fill material into waters of the United States) first obtain a certificate from the appropriate State agency stating that the fill is consistent with the State's water quality standards and criteria. In California, the authority to either grant certification or waive the requirement for permits is delegated by the SWRCB to the nine regional boards. A request for certification is submitted to the regional board at the same time that an application is filed with USACE. The regional board has 60 days to review the application and act on it. Because no USACE permit is valid under the CWA unless "certified" by the State, these boards may effectively veto or add conditions to any USACE permit.

Section 404

USACE is responsible for permitting certain types of activities affecting wetlands and other waters of the United States. Under Section 404 of the CWA, USACE has the authority to regulate activity that could discharge fill or dredge material, or otherwise adversely modify wetlands or other waters of the United States. USACE implements the Federal policy embodied in Executive Order 11990, which is intended to result in no net loss of wetland values or acres.

State

California Endangered Species Act

The CDFW administers a number of laws and programs designed to protect fish and wildlife resources. Principal among these is the California Endangered Species Act of 1984 (CESA; Fish and Game Code, Section 2050), which regulates the listing and take of state-endangered and state-threatened species. CESA declares that deserving species will be given protection by the State because they are of ecological, educational, historical, recreational, aesthetic, economic, and scientific value to the people of the state. CESA established that it is State policy to conserve, protect, restore, and enhance endangered species and their habitats.

Species listed under CESA cannot be "taken" without adequate mitigation and compensation. The definition of take under CESA is the same as described above for the FESA. However, based on findings of the California Attorney General's Office, take under CESA does not prohibit indirect harm by way of habitat modification. Typically, the CDFW implements endangered species protection and take determinations by entering into management agreements (California Fish and Game Code, Section 2081 Management Agreements) with project applicants.

California Fish and Game Code

CDFW Lake and Streambed Alteration Agreements. Under Sections 1600-1616 of the California Fish and Game Code, the CDFW regulates activities that would alter the flow, bed, channel, or bank of streams and lakes. The limits of CDFW's jurisdiction are defined in the code as the "... bed, channel or bank of any river, stream, or lake designated by the department in which there is at any time an existing fish or wildlife resource or from which these resources derive benefit ..." (Section 1601). In practice, the CDFW usually marks its jurisdictional limit at the top of the stream or bank, or at the outer edge of the riparian vegetation, whichever is wider.

California Fish and Game Code Sections 3503, 3503.5, and 3513. Fish and Game Code Section 3503 states that it is unlawful to take, possess, or needlessly destroy the nests or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto. Fish and Game Code Section 3503.5 protects all birds-of-prey (raptors) and their eggs and nests. Section 3513 states that it is unlawful to take or possess any migratory non-game bird as designated in the MBTA. These regulations could require that elements of the proposed project (particularly vegetation removal or construction near nest trees) be reduced or eliminated during critical phases of the nesting cycle unless surveys by a qualified biologist demonstrate that nests, eggs, or nesting birds will not be disturbed, subject to approval by CDFW and/or USFWS.

California Fish and Game Code Sections 3511, 4700, 5050, and 5515. Sections 3511 (birds), 4700 (mammals), 5050 (reptiles and amphibians), and 5515 (fish) of the California Fish and Game Code designate certain species as “fully protected.” Fully protected species, or parts thereof, may not be taken or possessed at any time. The California Fish and Game Commission may authorize the collecting of such species for necessary scientific research. Legally imported and fully protected species or parts thereof may be possessed under a permit issued by CDFW.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act charges the SWRCB and the nine Regional Water Quality Control Boards with protecting water quality throughout California. Typically, the SWRCB and regional boards act in concert with USACE under Section 401 of the CWA.

California Wetlands Conservation Policy

The California Wetlands Conservation Policy (1993 - Senate Concurrent Resolution No. 28) created an interagency task force headed by the State Resources Agency and California EPA to: (1) ensure no overall net loss, and a long-term net gain in the quantity, quality, and permanence of wetlands acreage and values; (2) reduce procedural complexity in the administration of State and Federal wetlands conservation programs; and (3) encourage partnerships that make restoration, landowner incentives, and cooperative planning the primary focus of wetlands conservation.

This resolution directed the CDFW to prepare and submit to the legislature a plan identifying means to protect existing wetlands and restore former wetlands. This includes identification of sufficient potential wetlands sites to increase the amount of wetlands in California by 50 percent by the year 2000, and a program for the public and private acquisition of such lands. While the resolution does not have the force and effect of law, CDFW and other California State agencies frequently point to it as an expression of State policy.

Native Plant Protection Act

The California Native Plant Protection Act (California Fish and Game Code sections 1900-1913) prohibits the taking, possession, or sale within the state of any rare, threatened, or endangered plants as defined by CDFW. Under this act, landowners with rare plants on their property must provide CDFW 10 days of notice to salvage (remove for transplant) the plants before destruction occurs. Project impacts to these species would be considered “significant” if the species are known to occur within the area of disturbance associated with construction of the project, or “potentially significant” if the species has a high potential to occur within the area of disturbance.

California Environmental Quality Act

Although threatened and endangered species are protected by specific Federal and State statutes, Section 15380(b) of the CEQA Guidelines provides that a species not listed on the Federal or State list of protected species may be considered rare or endangered if the species can be shown to meet certain specified criteria. These criteria have been modeled after definitions in the FESA and the section of the California Fish and Game Code dealing with rare or endangered plants and animals. Section 15380(b) requires public agencies to undertake reviews to determine if projects would result in significant effects on species that are not listed by either the USFWS or CDFW (i.e., candidate species). Thus, CEQA provides an agency with the ability to protect a species from a project's potential impacts until the respective government agencies have an opportunity to designate the species as protected, if warranted.

Local

City of Sacramento Tree Preservation Ordinance

The City of Sacramento adopted the Tree Preservation Ordinance to protect trees, as they are a significant resource for the community. It is the City's policy to retain trees whenever possible, regardless of their size. When circumstances will not allow for retention, permits are required to remove heritage trees that are within the City's jurisdiction. Removal of, or construction around, trees that are protected by the tree ordinance are subject to permission and inspection by City arborists. The City of Sacramento Tree Service Division reviews project plans and works with the City of Sacramento Public Works Department during the construction process to minimize impacts to street trees in the city. The ordinance protects "street trees" and "heritage trees," as defined in the Sacramento City Code.

American River Parkway Plan

The American River Parkway Plan, last updated in 2008, is a policy document that provides guidelines for preservation, recreational use, development, and administration of the American River Parkway through balanced management of the parkway and resource protection. The plan includes policies related to: terrestrial resources; aquatic communities; water flows, water quality, and flood control; and land use.

Sacramento River Parkway Plan

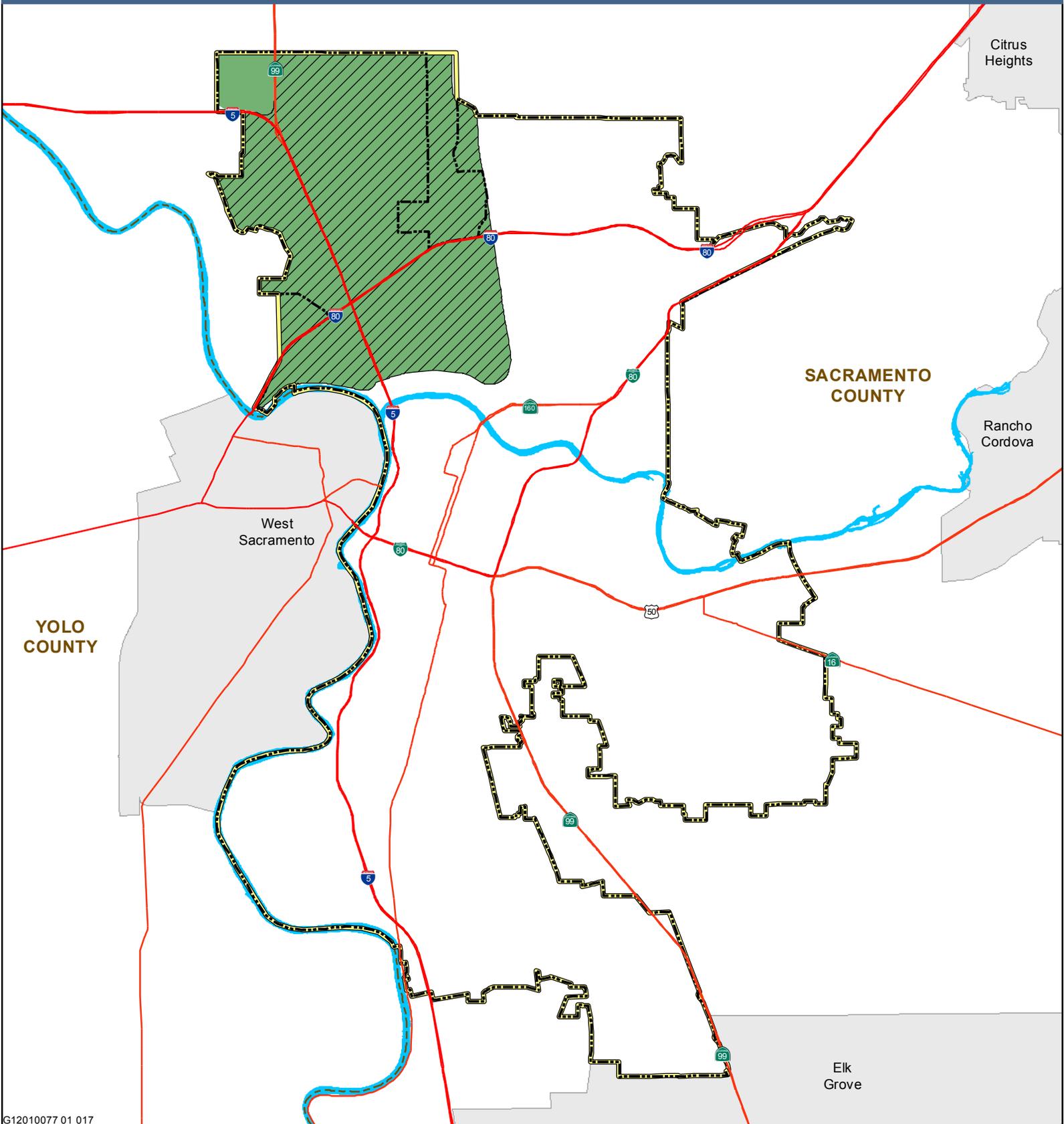
The Sacramento River Parkway Plan, adopted October 21, 1997, is a 20-year policy guide for habitat preservation, and restoration and recreational development for lands adjacent to the Sacramento River. The plan identifies current conditions, develops a vision for the future, and identifies programs and action for achieving the vision. The plan includes policies that have been developed to support the preservation of natural and cultural resources. These policies emphasize the importance of retaining the native vegetation, wildlife, and cultural resources as integral components of the parkway.

Natomas Basin Habitat Conservation Plan

Portions of the Policy Area are within the Natomas Basin - a low-lying portion area east of the Sacramento River and north of the American River. The Natomas Basin contains incorporated and unincorporated areas within the jurisdictions of the City of Sacramento, Sacramento County, and Sutter County (see Figure 6-5). Historically, the basin was primarily in agricultural production. The existing water conveyance systems within the Natomas Basin were created for water conveyance and drainage. The Natomas Basin contains a variety of habitat types, open water aquatic habitat

(including ditches and drains), emergent marsh, riparian forest, riparian scrub-shrub, grassland, vernal pools, and agriculture. They provide nesting, feeding, and migration corridor habitat for a variety of species. A number of special-status species (wildlife and plant), as determined by CDFW or the USFWS, inhabit or forage within the Natomas Basin.

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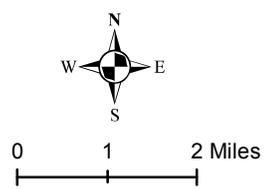


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Legend

-  City's Permit Area under the Natomas Basin Habitat Conservation Plan
-  Natomas Basin Habitat Conservation Plan Area
-  Highways
-  Policy Area
-  City Limits
-  County Boundary



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The 1994 North Natomas Community Plan required the development and implementation of a Habitat Conservation Plan as mitigation for development in North Natomas. The NBHCP is a conservation plan supporting application for incidental take permits (ITPs) under Section 10(a)(1)(B) of the Endangered Species Act and under Section 2081 of the California Fish and Game Code. The purpose of the NBHCP is to promote biological conservation in conjunction with economic and urban development within the Permit Areas of the Natomas Basin. The NBHCP establishes a multi-species conservation program to minimize and mitigate the expected loss of habitat values and incidental take of Covered Species that would result from urban development, operation of irrigation and drainage systems, and certain activities associated with The Natomas Basin Conservancy's management of its system of reserves established under the NBHCP. The goal of the NBHCP is to minimize incidental take of the Covered Species in the Permit Areas, and to provide mitigation for the impacts of Covered Activities on the Covered Species and their habitat.

In 1997, the NBHCP was approved by the City of Sacramento and ITPs were issued to the City by USFWS and CDFW. Subsequently, the 1997 NBHCP was challenged and on August 15, 2000, the United States District Court, Eastern District, ruled that the USFWS ITP was invalid and an Environmental Impact Statement was required. On May 15, 2001, in a Federal court ruling, a Settlement Agreement was attained which granted a motion modifying the Order to allow incidental take protection for limited development within the City of Sacramento with the provision of mitigation land in specific areas of the Natomas Basin. Development of 1,068 acres of land in both North and South Natomas would be allowed to proceed if in compliance with mitigation requirements of the Settlement Agreement.

The City of Sacramento, Sutter County and the USFWS prepared a revised NBHCP and an Environmental Impact Report/Environmental Impact Statement that were approved on May 13, 2003 by the Sacramento City Council. On June 27, 2003, the USFWS issued ITPs to the City of Sacramento, Sutter County, and The Natomas Basin Conservancy. CDFW issued an amended ITP on July 10, 2003.

The NBHCP mitigation requirements include:

- Payment of HCP fees or dedication of land at a ratio of 0.5 to 1.
- Reconnaissance-level surveys to determine what habitats are present on a proposed development site. (Reconnaissance surveys are submitted with the developer's application.)
- Pre-construction surveys for potential special-status species not less than 30 days or more than 6 months prior to construction activities.
- Species-specific mitigation, as required, per USFWS and CDFW protocol.
- Grading permit issued and habitat removed.

Findings

- Though the majority of the Policy Area is currently in residential, commercial, and other urban development, valuable plant and wildlife habitat still exists. These natural habitats are located primarily in the northern, southern and eastern portions of the Policy Area, and within the city along river and stream corridors and in a number of undeveloped parcels.
- Undeveloped grasslands in the Policy Area have a high probability of supporting vernal pools or other seasonal wetlands and the listed plant and wildlife species associated with them. These grasslands are most common in undeveloped areas that lie largely outside of current urban limits in North Sacramento and Natomas, East Sacramento, and South Sacramento. However, undeveloped lots within otherwise developed areas are capable of supporting these resources as well.
- Approval from the City of Sacramento, pursuant to the City's Tree Ordinance, must be obtained prior to the removal of any trees, particularly native trees or Heritage trees in the Policy Area.
- Wetlands subject to USACE' jurisdiction within the Policy Area are primarily associated with the Sacramento and American rivers, and their tributaries and/or their floodplains. In addition, vernal pools, seasonal wetlands and isolated ponds are present in undeveloped portions of the Policy Area.
- Development within the boundaries of the Natomas Basin Habitat Conservation Plan area must comply with the provisions described in the HCP and pay a mitigation fee sufficient to cover the costs of acquiring, restoring and managing one-half acre of habitat for every acre of land developed. Habitat lands would be acquired and managed by the Natomas Basin Conservancy.

6.3 Water Resources and Quality

Introduction

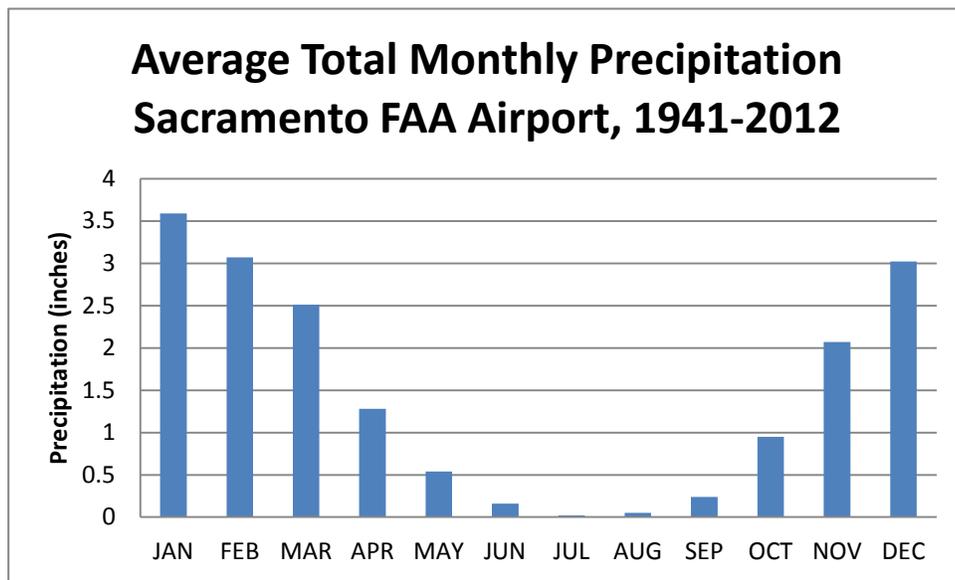
This section describes the existing water resources within the Policy Area. It also includes, Federal, State, and local regulations pertaining to water resources and quality. A discussion of the sewer and drainage system within the Policy Area is contained in Section 4.1. Information on water infrastructure and available water supply can be found in Sections 4.2. and 4.3 Flooding hazards are addressed in Section 7.2.

Existing Conditions

Precipitation

The Policy Area experiences most precipitation between November and April (see Figure 6-6). Essentially all of the precipitation that occurs in the Policy Area is rain. Based on data gathered at Sacramento FAA Airport between 1941 and 2012, average annual rainfall is approximately 17.54 inches, but can range from wet to dry years. Between 1941 and 2012, recorded annual rainfall ranged from a low of 6.25 inches in 1976 to a high of 33.44 inches in 1983 (Western Regional Climate Center 2012).

Figure 6-6 Average Total Monthly Precipitation



Source: Western Regional Climate Center 2012

Surface Water Resources

The city of Sacramento is located at the confluence of the Sacramento and American rivers in the Sacramento River Basin (Figure 6-7). The Sacramento River Basin encompasses about 27,000 square miles and is bound by the Sierra Nevada to the east, the Coast Ranges to the west, the Cascade Range and Trinity Mountains to the north, and the Sacramento–San Joaquin Delta to the southeast. The Sacramento River Basin is the largest river basin in California, capturing, on average, approximately 22 million acre-feet of annual precipitation.

Sacramento River

The Sacramento River extends over 300 miles from the Klamath Mountains in the north to the Sacramento-San Joaquin Delta. It is California’s largest river, with an annual runoff of 22,000,000 acre-feet. The Sacramento River is managed by dams for power generation, flood control, water supply, recreation, fisheries, and wildlife.

Six small tributaries of the Sacramento River pass through, and provide drainage for, the city of Sacramento. These tributaries are: Dry Creek, Magpie Creek, and Arcade Creek north of the American River; and Morrison Creek, Elder Creek, and Laguna Creek south of the American River. Approximately 40 miles south of the Sacramento area, the Sacramento River joins the San Joaquin River in the Sacramento-San Joaquin Delta, which drains into the San Francisco Bay.

American River

The American River, which has a watershed that encompasses approximately 1,900 square miles from the western slope of the Sierra Nevada to the city of Sacramento, is a tributary to the Sacramento River. The river is regulated by dams, canals, and pipelines for power generation, flood control, water supply, recreation, fisheries, and wildlife management. Folsom Dam, located on the American River, is owned and operated by the U.S. Bureau of Reclamation and divides the upper watershed from the lower watershed. Folsom Lake and its afterbay, Lake Natoma, release water to the lower American River and to Folsom South Canal at Nimbus Dam. The operation of Folsom Dam and Nimbus Dam directly affects most of the water utilities on the American River system.

Sacramento-San Joaquin Delta

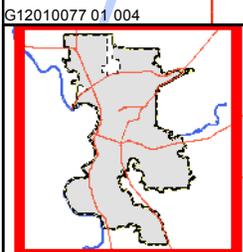
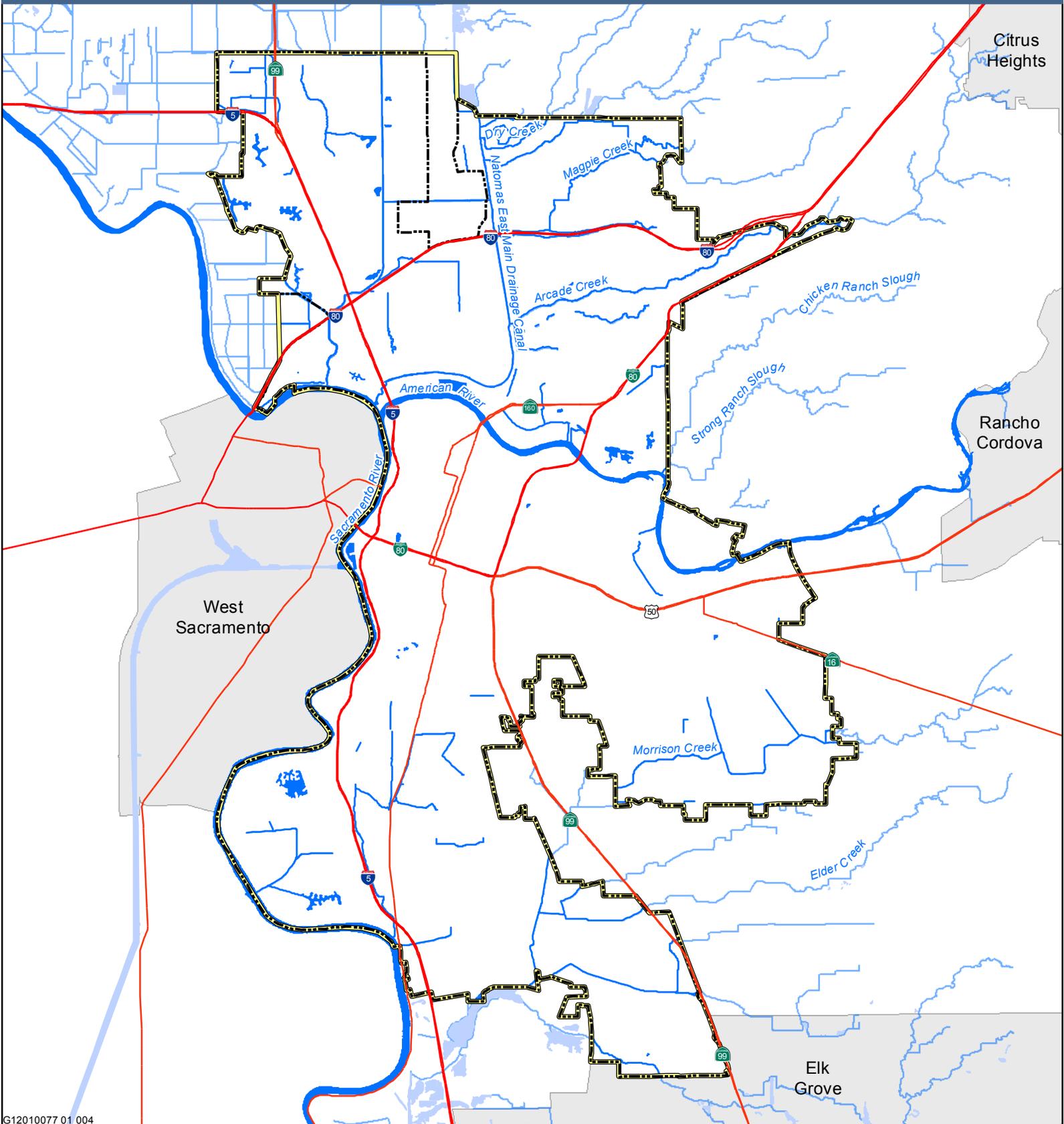
The I Street Bridge over the Sacramento River is the northern boundary of the Legal Delta, as defined in California Water Code Section 12220. River elevation up to this point is subject to muted tidal influence.

Other Surface Water Bodies

The Policy Area contains many natural and man-made drainage features that ultimately drain into the Sacramento River. In addition to those listed above, local surface water drainages or creeks such as Chicken Ranch and Strong Ranch Sloughs, Florin Creek, and Rio Linda Creek are major natural drainages within the Policy Area. Man-made drainage canals, such as the Natomas East Main Drain Canal and the East, West, and Main Drainage Canals provide drainage for a large portion of the urbanized areas within the Policy Area that are not served by the combined sewer system (CSS) or the City's drainage collection system.

Surface Water Quality

The beneficial uses of the Sacramento and American rivers identified by the Central Valley Regional Water Quality Control Board (CVRWQCB) include municipal, agricultural, and recreational water supply. Other beneficial uses include freshwater habitat, spawning grounds, wildlife habitat, navigation on the Sacramento River, and industrial (power generation) uses on the American River. Ambient water quality in the Sacramento and American rivers is influenced by numerous natural and artificial sources, including soil erosion, discharges from industrial and residential wastewater plants, stormwater runoff, agriculture, recreation activities, mining, timber harvesting, and flora and fauna. The reaches of the Sacramento and American rivers that flow through the Sacramento urban area are considered impaired for certain fish consumption and aquatic habitat and are listed on the EPA approved 2006 section 303(d) list of water quality limited segments. The Sacramento River is listed as impaired under the 303(d) list for mercury and unknown toxicity, and the American River is listed for mercury and unknown toxicity. Other major creeks, drainage canals, and sloughs in the city boundaries are also listed for pesticides and copper. The Natomas East Main Drainage Canal is listed for the pesticide diazinon and polychlorinated biphenyls (PCBs). Table 6-4 shows waterbodies in the urbanized Sacramento area that are considered impaired based on identified exceedances of water quality standards.



- Legend**
- Surface Water
 - Highways
 - City Limits
 - Policy Area



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Table 6-4 Waterbodies Exceeding Water Quality Standards			
<i>Waterbody</i>	<i>Reach</i>	<i>Estimated Size Affected</i>	<i>Pollutant/Stressor(s)</i>
Delta Waterways	Northern portion	6,795 acres	Chlordane Chlorpyrifos DDT Diazinon Dieldrin Group A Pesticides Invasive Species Mercury Polychlorinated biphenyls
American River	Lower (Nimbus Dam to confluence with Sacramento River)	27 miles	Mercury Polychlorinated biphenyls
Arcade Creek		9.9 miles	Chlorpyrifos Diazinon Copper Malathion Pyrethroids Sediment Toxicity
Morrison Creek	Morrison Creek from Elk Grove-Florin Rd to Beach Lake	26 miles	Diazinon PCP Pyrethroids Sediment Toxicity
Elder Creek		11 miles	Chlorpyrifos Diazinon Pyrethroids Sediment Toxicity
Chicken Ranch Slough		8 miles	Chlorpyrifos Diazinon Pyrethroids Sediment Toxicity
Natomas East Main Drainage Canal (aka Steelhead Creek)	Downstream of confluence with Arcade Creek	3.5 miles	Diazinon Polychlorinated biphenyls Mercury
Natomas East Main Drainage Canal (aka Steelhead Creek)	Upstream of confluence with Arcade Creek	12 miles	Polychlorinated biphenyls
Sacramento River	Knights Landing to the Delta	16 miles	Mercury Diazinon Chlordane DDT Dieldrin PCBs

Source: State Water Resources Control Board. 2011. GIS files for the 2010 303(d) List. Last modified Dec 12, 2011.

Based on current water quality reports, the American and Sacramento rivers are both excellent drinking water sources. These rivers can be treated to meet all Title 22 drinking water standards using conventional and direct filtration processes, and newer membrane technologies. There are no persistent constituents in the raw waters that require additional treatment processes. Chemical treatments are sometimes seasonally required to treat for rice herbicides.

Urban Runoff

Within the Policy Area, constituents found in urban runoff vary as a result of differences in geographic features, land use, vehicle traffic, and percent of impervious surface. Seasonally, there is a natural weather pattern of a long dry period from May to October in the Sacramento area. During this seasonal dry period, pollutants contributed by vehicle exhaust, vehicle and tire wear, crankcase drippings, spills, and atmospheric fallout accumulate within the urban watershed. Precipitation during the early portion of the wet season (November) washes these pollutants into the stormwater runoff, which can result in elevated pollutant concentrations in the initial wet weather runoff. This initial runoff with peak pollutant levels is referred to as the "first flush." Concentrations of heavy metals present in dry weather runoff (e.g., runoff during the dry season is generated by landscape irrigation, street washing, etc.) are typically lower than concentrations measured in wet weather runoff (runoff generated during the rainy season primarily by precipitation).

In general, stormwater runoff within the city of Sacramento flows into either the City's CSS or into individual drainage sumps located throughout the Policy Area. Water collected by the CSS is transported to the Sacramento Regional County Sanitation District's (SRCSD's) Sacramento Regional Wastewater Treatment Plant (SRWWTP), where it is treated prior to discharge into the Sacramento River. During dry weather, approximately 25 million gallons per day (mgd) are transported to the SRCSD's SRWWTP. For smaller storms, the City sends up to 60 mgd of wastewater to the SRWWTP. All piping, drains, basins and pumps connected to the CSS are maintained and operated by the City of Sacramento Utilities Department.

When the flows in the CSS exceed 60 mgd, flows are routed to Pioneer Reservoir, a 28 million gallon storage and primary treatment facility located near the intersection of I-5 and US 50 in the city of Sacramento. Once capacity of Pioneer Reservoir has been reached, an additional volume of stormwater - up to 350 mgd - can receive primary treatment with disinfection and be discharged to the Sacramento River. The City also operates its Combined Wastewater Treatment Plant (CWTP) on 35th Avenue, where an additional 130 mgd of combined wastewater can receive primary treatment with disinfection prior to discharging to the Sacramento River. The CWTP operates under a National Pollutant Discharge Elimination System (NPDES) permits (NPDES No. CA 0079111), which requires permittees to develop, administer, implement, and enforce a comprehensive Stormwater Quality Improvement Plan (SQIP) in order to reduce pollutants in urban runoff to the maximum extent practicable.

Groundwater Resources

The Policy Area is located in two subbasins of the Sacramento Valley Groundwater Basin. From the American River south, the Policy Area is in the 248,000-acre South American Basin. North of the American River, the Policy Area is within the 351,000-acre North American Basin.

Hydrogeologic Information

The Policy Area is underlain by various geologic formations that constitute the water-bearing deposits. These formations include an upper, unconfined aquifer system consisting of the Modesto, Riverbank, Turlock Lake, Victor, Fair Oaks, and Laguna formations, and Arroyo Seco and South Fork Gravels, and a lower, semi-confined aquifer system consisting primarily of the Mehrten Formation. These formations are typically composed of lenses of inter-bedded sand, silt, and clay that are interlaced with coarse-grained stream channel deposits. These deposits form a wedge that generally thickens from east to west to a maximum thickness of about 2,500 feet along the western margin of the subbasins (DWR 2006).

Groundwater occurs in unconfined to semi-confined states throughout the subbasins. Semi-confined conditions occur in localized areas; the degree of confinement typically increases with depth below the ground surface. Groundwater in the upper aquifer formations is typically unconfined. However, due to the mixed nature of the alluvial deposits, semi-confined conditions can be encountered at shallow depths in the upper aquifer.

Groundwater Levels

Groundwater levels in northern Sacramento County have generally decreased, declining as much as 1.5 feet annually for the last 40 years (DWR 2006). The SCGA Biennial Basin Management Report (2010) indicates that there has been a consistent decline in groundwater levels of approximately 20 to 30 feet beginning in the 1950s and 1960s until about 1980. From 1980 through 1983, water levels recovered by about 10 feet and remained relatively stable until the beginning of the 1987 - 1992 drought. During this period, water levels declined about 15 feet. Between 1995 and 2003, most water levels recovered to levels generally higher than those prior to 1987 - 1992 drought. In some locations, this recovery has continued through 2008. (SCGA 2010) Ground water elevation in the Policy Area is generally 10 to 20 feet below mean sea level (SGA 2008 and SCGA 2010).

Recharge. Sources of groundwater recharge include: active river and stream channels, inflow of groundwater from outside the policy area, deep percolation of applied surface water and precipitation.

Extraction. When extractions occur from a single well, a localized cone of depression is formed around the well. The shape and depth of the cone of depression depend on several factors including (but not limited to): (1) the rate of extraction; (2) the presence of nearby sources of recharge and extraction; (3) the rate of water transmitted through the aquifer; and (4) the “confined” or “unconfined” state of the aquifer. Over a period of time, extraction from an unconfined aquifer can de-water the aquifer around the well. However, when extraction ceases, the water level within the aquifer typically rebounds to its pre-extraction condition. A confined or semi-confined aquifer behaves differently, since the water is under pressure from a recharge source. Instead of de-watering the aquifer, a change in confining pressure occurs as a result of extractions; the aquifer remains saturated.

Large, regional cones of depression can form in areas where multiple groundwater extraction wells are in operation. The location and shape of a regional cone of depression is influenced by the same factors as a single well. Fluctuations in regional cones of depression are measured over years and result from changes in recharge or extractions. A sequence of successive dry years can decrease the amount of natural recharge to the aquifer and often a coinciding increase in groundwater extraction. Consequently, groundwater elevations decrease in response to this imbalance between recharge and extraction. Over time, the shape and location of the aquifer’s regional cone of depression fluctuates.

There are many groundwater extraction wells in, and adjacent to, the Policy Area. Intensive use of the groundwater basin has resulted in a general lowering of groundwater elevations near the center of the basin (away from the sources of recharge). As early as 1968, pumping depressions were evident in northern Sacramento County. These depressions have grown and coalesced into a single cone of depression centered under the Del Paso Heights area in the northeastern portion of the Policy Area (SGA 2008).

Groundwater Quality

Groundwater quality in the Policy Area is generally within the secondary drinking water standards for municipal use, including levels of iron, manganese, arsenic, chromium, and nitrates. The groundwater in the Policy Areas is described as a calcium magnesium bicarbonate, with minor fractions of sodium magnesium bicarbonate (DWR 2004). The water quality in the upper aquifer system is regarded as superior to that of the lower aquifer system, principally because the lower aquifer system (specifically the Mehrten formation) contains higher concentrations of iron and manganese. Water from the upper aquifer generally does not require treatment (other than disinfection) (SGA 2008).

The lower aquifer system also has higher concentrations of total dissolved solids (TDS, a measure of salinity) than the upper aquifer, although it typically meets standards as a potable water supply. The TDS in most wells are within the secondary drinking water standard, but vary quite significantly throughout the Policy Area, ranging from 21 to 657 mg/L, with the overall average at 221 mg/L (DWR 2004).

Groundwater Contamination. Groundwater containing elevated levels of contaminants is present within or near the Policy Area. Contaminant plumes are associated with the former Southern Pacific and Union Pacific Railyards east of the Capitol Building along the American River (downtown Sacramento), former McClellan Air Force Base (AFB) north of the Policy Area, former Mather AFB east of the Policy Area, and the Aerojet site along the American River in Rancho Cordova east of the Policy Area. For the McClellan AFB plumes, the primary contaminants of concern (COC) are trichloroethene (TCE), tetrachloroethene (PCE), cis-1,2-dichloroethene (DCE), 1,4-dioxane, and 1,2-dichloroethane (DCA). For the Mather AFB plumes, the primary COCs are perchlorate, TCE, PCE, and carbon tetrachloride. For the Aerojet plume, the primary COCs are TCE, perchlorate, n-nitrosodimethylamine (NDMA), 1,4-dioxane. In addition to these major groundwater contaminant plumes, there are currently over nearly 50 active leaking underground storage tank locations within the Policy Area (see Section 7.5 Hazardous Materials). Please see Section 7.5 Hazardous Materials for more information regarding areas of groundwater contamination.

Drinking Water

The American and Sacramento rivers provide approximately 84 percent of the City of Sacramento's drinking water supply. Groundwater resources supply the remaining 16 percent of drinking water. The Sacramento and American rivers are vulnerable to contaminants from recreational activities, and the Sacramento River is also susceptible to agricultural contaminants (City of Sacramento 2011).

An assessment of the City's groundwater wells was completed in December 2002. The groundwater wells north of the American River are particularly vulnerable to sewer collection systems, leaking underground storage tanks, known contaminant plumes, agricultural drainage, gas stations, dry cleaners, metal plating and chemical processing storage facilities, electrical/electronic manufacturing,

and automobile body shops. Wells south of the American River are considered vulnerable to leaking underground storage tanks and sewer collection systems (City of Sacramento 2011).

The City's 2011 Consumer Confidence Report includes a comparison of the detected chemicals in the City's drinking water supplies to the standards set by the California Department of Health Services (DHS) and the US Environmental Protection Agency. Drinking water may reasonably be expected to contain at least small amounts of some contaminants, the presence of which do not necessarily mean that water poses a health risk. According to the 2011 Consumer Confidence Report, the City's water meets or exceeds all Federal and State drinking water standards (City of Sacramento 2011).

Regulatory Context

Federal

Safe Drinking Water Act

The Safe Drinking Water Act, as amended in 1996, sets national water quality policy by establishing allowable quantities of potentially harmful constituents. The Act authorizes the United States Environmental Protection Agency (US EPA) to set national health-based standards for drinking water to protect against both naturally-occurring and man-made contaminants. The US EPA oversees the states, localities, and water suppliers that implement the standards.

Clean Water Act

Water quality objectives for all Waters of the United States (including the Sacramento River) are established under applicable provisions of Section 303 of the Federal Clean Water Act (CWA). Section 307 of the CWA describes the factors that US EPA must consider in setting effluent limits for priority pollutants. The CWA prohibits the discharge of pollutants to navigable waters from a point source unless authorized by a NPDES permit.

National Pollutant Discharge Elimination System Permits

The NPDES permit system was established to regulate municipal and industrial discharges to surface waters. Each NPDES permit contains limits on allowable concentrations and mass emissions of pollutants contained in discharges. Sections 401 and 402 of the CWA contain general requirements regarding NPDES permits. The goal of NPDES stormwater regulations is to improve the quality of stormwater discharged to receiving waters to the "maximum extent practicable" through the use of structural and non-structural Best Management Practices (BMPs). BMPs can include the development and implementation of various practices including educational measures (workshops informing public of what impacts results when household chemicals are dumped into storm drains), regulatory measures (local authority of drainage facility design), public policy measures (label storm drain inlets as to impacts of dumping on receiving waters), and structural measures (filter strips, grass swales and detention ponds).

State

California Water Code

The State Water Resources Control Board (SWRCB) and CVRWQCB have established water quality standards, as required by Section 303 of the CWA and the Porter-Cologne Water Quality Control Act. The Porter-Cologne Water Quality Act states that basin plans consist of beneficial uses, water

quality objectives, and a program of implementation for achieving water quality objectives. The Water Quality Control Plan, or Basin Plan, prepared by the CVRWQCB, has established water quality numerical and narrative standards and objectives for rivers and their tributaries within its jurisdiction. In cases where the Basin Plan does not contain a standard for a particular pollutant, other criteria, such as US EPA water quality criteria developed under section 304(a) of the CWA apply.

Water quality objectives for the Sacramento River are specified in the Water Quality Control Plan for the Sacramento River Basin and San Joaquin River Basin (Basin Plan) prepared by the CVRWQCB in compliance with the Federal CWA and the California Water Code (section 13240). The Basin Plan establishes water quality objectives, and implementation programs to meet stated objectives and to protect the beneficial uses of water in the Sacramento-San Joaquin River Basin. Because the city of Sacramento and the Policy Area are located within the CVRWQCB's jurisdiction, all discharges to surface water or groundwater are subject to the Basin Plan requirements.

CVRWQCB NPDES Permits

The CVRWQCB has adopted a general NPDES permit for short-term discharges of small volumes of wastewater from certain construction-related activities. Permit conditions for the discharge of these types of wastewaters to surface water are specified in "General Order for Dewatering and Other Low-Threat Discharges to Surface Waters" (Order No. 5-00-175, NPDES No. CAG995001). Discharges may be covered by the permit provided they are (1) either four months or less in duration, or (2) the average dry weather discharge does not exceed 0.25 mgd. Construction dewatering, well development water, pump/well testing, and miscellaneous dewatering/low-threat discharges are among the types of discharges that may be covered by the permit. The general permit also specifies standards for testing, monitoring, and reporting, receiving water limitations, and discharge prohibitions.

In accordance with NPDES regulations, to minimize the potential effects of construction runoff on receiving water quality, the State requires that any construction activity affecting 1 acre or more must obtain a General Construction Activity Stormwater Permit (General Permit). Performance standards for obtaining and complying with the General Permit are described in NPDES General Permit No. CAS000002, Waste Discharge Requirements, Order No. 99-08-DWQ. The General Permit was modified in April 2001 (SWRCB Resolution No. 2001-046) to require permittees to implement specific sampling and analytical procedures to determine whether the BMPs used at permitted construction sites are effective.

General Permit applicants are required to prepare and implement a Stormwater Pollution Prevention Plan (SWPPP), which includes implementing BMPs to reduce construction effects on receiving water quality by implementing erosion control measures and reducing or eliminating non-stormwater discharges.

California Code of Regulations

Public water system operators are required to regularly monitor their drinking water sources for microbiological, chemical and radiological contaminants to show that drinking water supplies meet the regulatory requirements listed in Title 22 of the California Code of Regulations as primary maximum contaminant levels (MCLs). Primary standards are developed to protect public health and are legally enforceable. Among these contaminants are approximately 80 specific inorganic and organic contaminants and six radiological contaminants.

Public water system operators are also required to monitor for a number of other contaminants and characteristics that deal with the aesthetic properties of drinking water. These are known as secondary MCLs. Secondary standards are generally associated with qualities such as taste, odor, and appearance. In California, secondary standards are legally enforceable for all new drinking water systems and new sources developed by existing public water suppliers (DWR 2003). The public water system operators are also required to analyze samples for unregulated contaminants, and to report other contaminants that may be detected during sampling.

Local

NPDES Permit

The County of Sacramento and the cities of Sacramento, Folsom, Citrus Heights, Elk Grove, Rancho Cordova, and Galt have a joint NPDES permit (No. CAS082597). The intent of the permit is to develop, achieve, and implement a timely, comprehensive, cost effective storm water pollution control program to reduce the discharge of pollutants in stormwater runoff to the greatest extent practicable.

Stormwater Quality Design Manual for Sacramento and South Placer Regions

The County of Sacramento and the Cities of Sacramento, Folsom, Citrus Heights, Elk Grove, Rancho Cordova, Galt, and Roseville have collaborated and published the Stormwater Quality Design Manual for Sacramento and South Placer Regions (2007) to meet the regulatory requirements of their respective municipal stormwater NPDES permits. The Manual provides locally-adapted information for design and selection of three categories of stormwater quality control measures: source control, runoff reduction, and treatment control.

City of Sacramento Stormwater Quality Improvement Plan

The City of Sacramento prepared the Stormwater Quality Improvement Plan (SQIP) to reduce the pollution carried by stormwater into local creeks and rivers to the maximum extent practicable (MEP). The comprehensive plan includes pollution reduction activities for construction sites, industrial sites, illegal discharges and illicit connections, new development, and municipal operations. The program also includes an extensive public education effort, target pollutant reduction strategy and monitoring program. The SQIP includes a wide range of BMPs, control measures, and performance standards to be implemented during the permit period (currently 2008-2013).

City of Sacramento Municipal Code

The City's Land Grading and Erosion Control Ordinance requires project applicants to prepare erosion, sediment and pollution control plans for both during and after construction of a project, as well as preliminary and final grading plans. The ordinance applies to projects where 350 cubic yards or more of soil is excavated and/or disposed and requires BMPs that must be approved of by the City's Department of Utilities. In addition, the City's Stormwater Management and Discharge Control Ordinance minimizes or eliminates sediment and pollutants in construction site stormwater discharges.

The City Municipal Code, Chapter 13.16 Stormwater Management and Discharge Control, mandate development projects to incorporate source point and/or treatment controls to minimize long-term, post-construction discharge of stormwater pollutants from new development or modifications to existing development. Specific control measures must be developed to reduce the risk of non-

stormwater discharge and/or pollutant discharge into the City's drainage system or other receiving waters from business-related activities.

Section 13.080.030 of the Sacramento City Code prohibits the discharge of any substances, materials, waters, or waste if the discharge would violate any sewer use ordinance enacted by the Sacramento Regional County Sanitation District (SRCSD). Section 13.08.040 of the Sacramento City Code identifies specific waters, wastes, and substances that may not be discharged to the sewer.

City of Sacramento Department of Utilities Engineering Services Policy No. 0001

All new groundwater discharges to the CSS or separated sewer system are regulated and monitored by the City's Utilities Department pursuant to Department of Utilities Engineering Services Policy No. 0001, adopted as Resolution No. 92-439 by the Sacramento City Council. Groundwater discharges to the City's sewer system are defined as construction dewatering discharges, foundation or basement dewatering discharges, treated or untreated contaminated groundwater cleanup, discharges, and uncontaminated groundwater discharges.

The City requires that any short-term discharge be permitted, or an approved Memorandum of Understanding (MOU) for long-term discharges be established, between the discharger and the City. Short-term limited discharges of seven days duration or less must be approved through the City Department of Utilities by acceptance letter. Long-term discharges of greater duration than seven days must be approved through the City Department of Utilities and the Director of the Department of Utilities through a MOU process. The MOU must specify the type of groundwater discharge, flow rates, discharge system design, a City-approved contaminant assessment of the proposed groundwater discharge indicating tested levels of constituents, and a City-approved effluent monitoring plan to ensure contaminant levels remain in compliance with State standards or SRCSD- and CVRWQCB-approved levels. All groundwater discharges to the sewer must be granted a SRCSD discharge permit. If the discharge is part of a groundwater cleanup or contains excessive contaminants, CVRWQCB or Sacramento County approval is also required.

Discharges in the CSD-1 service area do not require a MOU with the City. Permission to discharge must be obtained from CSD-1.

Findings

- An increase in the urbanized areas in and adjacent to the Policy Area has increased the potential for pollutant discharges to surface water and groundwater.
- The water quality of the Sacramento and American rivers supports beneficial uses; however, their tributaries often have degraded water quality.
- The City of Sacramento has adopted and implemented ordinances, plans, and policies, in compliance with Federal and State law, to address pollutants in urban water runoff into creeks, tributaries, and rivers.
- The increase in population in the Policy Area has increased the amount of water resources used for drinking water, industrial use, and recreation. Increased groundwater use in the northeastern portion of the Policy Area has created a cone of depression, and an overall decrease in groundwater levels in the past 30 years.

6.4 Cultural Resources

Introduction

This technical background report describes the historic and cultural (historical, archaeological, and paleontological) resources present or potentially present in the City of Sacramento Policy Area. Significant resources in the area include structures that may be eligible for the National Register of Historic Places (NRHP), the California Register of Historical Resources (CRHR), and the City of Sacramento's Sacramento Register of Historical and Cultural Resources (Sacramento Register). Information for this section is based on research performed by Peak & Associates (2005) and Page & Turnbull (2013).

Appendix B includes four themed context statements and a table that identifies historic resources currently listed on the Sacramento Register. The context statements address the following themes: agriculture, State government, railroads, and World War II, transportation, and redevelopment. The historic context statements are not intended to be a comprehensive community history or chronology, but rather identify significant themes, patterns, trends, and property types in the city. The context statements provide a framework for the identification, evaluation, and treatment of historic resources. Although there are additional contextual themes that explain the history and development of Sacramento, these were not researched as part of this Background Report.

Methodology

Prehistoric and Historic Archaeological Resources

Peak & Associates staff conducted archaeological research at the North Central Information Center (NCIC) of the California Historical Resources Information System to collect information on locations of recorded prehistoric sites in the Policy Area. Staff also consulted a set of base maps copied in the mid-1970s from original maps held by the early archeologists from UC Berkeley who worked to locate sites in the Sacramento area in the 1930s.

Sites recorded in the region include village sites, smaller occupation or special use sites, and lithic scatters. Native American use of the project area focused higher spots along the rivers, creeks and sloughs that provided water and sources of food. Recent findings in the city, such as at the City Hall site and elsewhere have helped further our understanding of the settlement pattern for the earliest inhabitants of the area, as well as detail regarding the dates of occupancy and use and additional understanding of the prehistoric period lifeways.

Determinations of eligibility of archaeological resources for the State and National Registers have been requested from the NCIC in January of 2013. Eligibility information from the NCIC will be included in the Master Environmental Impact Report, as appropriate.

Built Environment Context Statements

Research in support of the four (4) themed historic contexts is included as Appendix B of this Background Report. It was compiled from the following repositories: the Sacramento Room at the Sacramento Public Library; the Center for Sacramento History; the California State Library; the Online Archive of California; and the City of Sacramento's Planning Department. The works cited in the context statements are listed in the Appendix following the context statements.

Research for the regulatory background section of this report is based on data obtained from: the NCIC (records requested January 2013); the California Office of Historic Preservation (OHP); City of Sacramento's Register of Historic & Cultural Resources (2011); the City of Sacramento Preservation Element; the City of Sacramento Historic Preservation Director; and previous environmental documentation prepared for the City.

Existing Conditions

The Policy Area is located on the western edge of the Sacramento Valley and north of the geographic center of the State of California. The Sacramento Valley comprises roughly the northern third of the major north-northwest oriented synclinerium called either Valle Grande (Clark, 1929), Great Valley (Fenneman, 1931; Hackel, 1966), Central Valley (Jahns, 1954), Great Central Valley (Piper et al., 1939; Davis et al., 1957), or California Trough (Piper et al., 1939). The Central Valley Physiographic Province is located between the Sierra Nevada Physiographic Province on the east and the Coast Ranges Physiographic Province on the west

Prehistoric and Historic Archeological Background

The first settlements in the Sacramento Valley likely occurred during the late Pleistocene and early Holocene (14,000 to 8,000 B.P.) period. Sacramento's location within a great valley and at the confluence of two rivers, the Sacramento River and the American River, shaped its early and modern settlements. However, the archaeological record of such use is sparse. It is likely that Paleo-Indian populations occupied the area with villages located near watercourses. The Sacramento Delta was one of the first regions in California to attract intensive archeological fieldwork. Between 1893 and 1901, a vocational archeologist, J.A. Barr, excavated many prehistoric mounds in the Stockton area. He collected nearly 2,000 artifacts during the course of his investigations. H.C. Meredith was another vocational archeologist of the period who pursued collecting in the same Stockton locality. Meredith (1899, 1900) published a compilation of his own and Barr's findings, and these appear to constitute the earliest accounts of archeology within the Delta. Holmes (1902), from the Smithsonian Institution, further elaborated on the delta or "Stockton District" archeology, presenting illustrations of artifacts collected by Meredith and Barr.

It was Elmer J. Dawson who first recognized culture changes through time in delta archeology. Though he was an amateur archeologist, Dawson understood the necessity of keeping accurate notes on grave associations and provenience of artifacts. He collaborated with W. E. Schenck to produce an overview of northern San Joaquin Valley archeology (Schenck and Dawson 1929). The overview contained information on more than 90 prehistoric sites as well as data on previous collectors.

By 1931, the focus of archeological work was directed toward the Cosumnes River locality, where survey and exploration were conducted by Sacramento Junior College (Lillard and Purves 1936). Excavations, especially at the stratified Windmill mound (CA-SAC-107), suggested three temporally distinct cultural traditions: Early, Transitional, and Late. Information grew as a result of excavations at other mounds in the delta and lower Sacramento Valley by the Sacramento Junior College and the University of California, Berkeley.

Previous investigations in the region have focused upon very detailed archival research of Spanish sources (Bennyhoff 1977), reexamination of earlier work (Ragir 1972; Schulz 1981; Doran 1980) and archeological investigations at a number of small sites (Schulz et al. 1979; Schulz and Simons 1973;

Soule 1976). Several of the previously investigated sites probably represent satellite encampments or small villages associated with major villages. The majority of the sites appear to be relatively late in time, and probably represent Plains Miwok. The activities practiced are varied, but detailed studies on the faunal collection suggest season of occupation and a focus on fish species other than the main channel varieties.

Writing the definitive summary of California archeology, Moratto (1984: 529-547) devoted an entire chapter to linguistic prehistory. For the Central Valley region, Moratto points out that some Early Horizon and Middle Horizon central California archeological sites appear at least in part, contemporaneous, based on existing radiocarbon dates. Cultural materials recovered from CA-SJO-68, an Early Horizon site, are thought to date to 4350 B.P. or 2350 B.C. On the other hand, a Middle Horizon component at CA-CCO-308 dates to 4450 B.P. or 2450 B.C. The antiquity of other Early and Middle Horizon sites demonstrate an overlap of the two horizons by a millennium or more.

One explanation proposes that the Middle Horizon represents an intrusion of ancestral Miwok speaking people into the lower Cosumnes, Mokelumne, and Sacramento River areas from the Bay Area. The Early Horizon may represent older Yokuts settlements or perhaps the speakers of an Utian language who were somehow replaced by a shift of population(s) from the bay.

Ethnological Background

Nisenan. The major portion of the Policy Area lies in the territory attributed to the Nisenan tribe, a branch of the Maidu group of the Penutian language family. Tribes of this language family dominated the Central Valley, San Francisco Bay area, and western Sierra Nevada foothills when European immigrants first arrived. The Nisenan controlled the drainages of the Yuba, Bear, and American rivers, along with the lower portion of the Feather River. The tribes of this whole region referred to themselves as Nisenan, meaning "people," in contrast to the surrounding tribes, in spite of close linguistic and cultural similarities. For this reason, they are usually named by this term rather than the more technical "Southern Maidu." In any event, the local main village was of more importance to the people than the tribal designation, and groups identified themselves by the name of the central village.

The Nisenan tribes' northern boundary has not been clearly established due to similarity in language to neighboring groups. The eastern boundary was the crest of the Sierra Nevada mountains. The confluence of the American and Sacramento rivers on the valley floor was their southern boundary. The western boundary extended from this point upstream to the mouth of the Feather River.

The Valley Maidu settlement pattern was oriented to major river drainages, with ancillary villages located on tributary streams and sloughs. Major villages often supported a population exceeding five hundred people (Wilson and Towne 1978:389). The flat grasslands between water courses were used for collecting vegetable foods and hunting, but these activities leave little, if any, archeological evidence.

Both the valley and foothill Nisenan lived by hunting and gathering, with the latter providing the majority of their diet. Acorns in the forms of meal, soup or bread provided the staple diet, augmented by a wide variety of seeds and tubers. Hunting and fishing were regularly practiced, but provided less of the diet than vegetable foods. The bedrock mortar and pestle were employed to process the acorn meats into flour, and mortar cups are frequently found throughout the range of oak trees. Both salmon and eel were caught at Salmon Falls near Folsom.

The Nisenan practiced "Kuksu Cult" religion, a widespread pattern among the California Indians. Ceremonies congregated in the semi-subterranean dancehouse located at the central village and "cry sites" where the annual mourning ceremony for the dead took place. Later, the religious revival of the ghost dance also affected this area.

In 1833, a great epidemic swept through the Sacramento Valley. This epidemic has been attributed to malaria (Cook 1955:308), and is estimated to have killed seventy-five percent of the native population, leaving only a shadow of the original Maidu to face the intruding miners and settlers. The Nisenan of the mountain areas felt less of the impact of European settlement in California than the Valley Nisenan, who were subjected to some missionization. The Mountain Nisenan, remote from these early impacts, were overwhelmed by the gold rush. Native ways of life were almost totally abandoned, and today only a few families in Placer, Nevada, Yuba, and El Dorado counties identify themselves as Nisenan and can speak the language (Wilson and Towne 1978).

Plains Miwok. The southern portion of the Policy Area was controlled at the time of contact by the Plains Miwok. The most southerly Nisenan village was Sama, located near the point at which Riverside Boulevard parallels the Sacramento River. The Eastern Miwok represent one of the two main divisions of the Miwokan subgroup of the Utian language family (Levy 1978:398). The Plains Miwok, one of five separate cultural and linguistic groups of the Eastern Miwok, occupied the lower reaches of the Mokelumne, Cosumnes, and Sacramento Rivers, including the area of south Sacramento County surrounding the Policy Area. Linguistic studies and the application of a lexicostatistic model for language divergence suggest that the Plains Miwok was a distinct linguistic entity for the last 2,000 years (Levy 1970). This result led researchers such as Richard Levy (1978:398) to conclude that the Plains Miwok inhabited the Sacramento Delta for a considerable period of time.

The political organization of the Plains Miwok centered on the tribelet. Tribelets were comprised of 300 to 500 individuals (Levy 1978:410). Each tribelet was thought to control a specific area of resources and usually consisted of several villages or hamlets. Each tribelet also was divided along lineages. These lineages were apparently localized to a specific geographic setting and most likely represented a village site and its associated satellite sites where the seasonal collection of resources occurred (Levy 1978:398-399). Descent was reckoned through males. Each settlement apparently contained roughly 21 individuals according to data collected by Gifford (Cook 1955:35).

The diet of the Plains Miwok emphasized the collection of floral resources such as acorns, buckeye, digger pine nuts, seeds from the native grasses and various fresh greens. Faunal resources such as tule elk, pronghorn antelope, deer, jackrabbits, cottontails, beaver, gray squirrels, woodrats, quail and waterfowl were hunted. Fishing, particularly salmon and sturgeon, contributed significantly to the Plains Miwok diet (Levy 1978:402-403). The primary method of collecting fish was by nets, but the use of bone hooks, harpoons and obsidian-tipped spears is also known ethnographically (Levy 1978:404)

The Eastern Miwok manufactured both twined and coiled baskets. The baskets were used for the collection and storage of seeds, basketry cradles and gaming (Levy 1978:406). Tule mats were primarily used by the Plains Miwok as a floor covering. Other uses of tule included the manufacture of the tule balsa, a water craft in which native people navigated and exploited adjacent delta and major river systems.

Four main types of structures were known among the Eastern Miwok, depending on the environmental setting. In the mountains, the primary structure was a conical structure of bark slabs. At lower elevations, the structures were thatched, semi-subterranean earth-covered dwellings and two types of assembly houses used for ceremonial purposes (Levy 1978:408-409).

Bennyhoff (1977:11) characterized the Plains Miwok as intensive hunter-gatherers, with an emphasis upon gathering. The seasonal availability of floral resources defined the limits of the group's economic pursuits. Hunting and fishing subsistence pursuits apparently accommodated the given distribution of resources. The Plains Miwok territory covered six seasonally productive biotic communities and as such native people could apparently afford to pick and choose the resources they ranked highest from each of these zones. The subsequent storage of floral resources (such as acorns in granaries) allowed for a more stable use of the resource base (Bennyhoff 1977:10). The acorn was apparently the subsistence base needed to provide an unusually productive environment as earlier non-acorn using peoples who resided in the same geographic setting apparently suffered some seasonal deprivation (Schulz 1981). Such an emphasis upon the gathering of acorns is consistent with the population increase evident during the Upper Emergent Period in California (Doran 1980).

The study of piscine (fish) remains from both CA-SAC-65 (Schulz, Abels and Ritter 1979) and CA-SAC-145 (Schulz nd; Schulz and Simons 1973) indicates that small villages away from the major rivers appear to concentrate on the collection of fish species (particularly the Sacramento perch) that inhabited slow-moving waters.

Prehistoric and Historic Archaeology Sensitivity Areas

Previous surveys since 1930 have recorded approximately 80 archaeological sites within the Policy Area. The types of archaeological resources discovered include village sites, smaller occupation or special use sites, and lithic scatters. Native American use of the Policy Area focused on higher spots along the rivers, creeks and sloughs that provided water and sources of food. For the purposes of this study, the Policy Area was classified as one of three categories for analysis based on existing research: areas of high sensitivity for archaeological resources; areas of moderate sensitivity; and areas of low sensitivity. These areas are shown on Figure 6-8.

High Sensitivity. High sensitivity areas are those known to have recorded prehistoric period archeological resources present. To protect the precise locations of known resources, these zones have been generalized. The types of prehistoric sites recorded in the Policy Area include large village mounds, small villages, and campsites. The sites contain midden (cultural deposit), Native American inhumations, artifacts [chipped stone (projectile points, scrapers) ground stone (bowl mortars, pestles, metates, manos, charmstones, beads, pipes), bone artifacts (awls, ornaments, needles, hairpins, whistles, pendants), antler artifacts (flakers), baked clay, and shell artifacts (ornaments and beads)], and other materials from occupation including shell, animal bone, and charcoal.

Some of the sites were occupied very late in time, with the name of the village known and relationships with the Indians discussed in Sutter's diaries in the 1840's. Other sites may have been occupied hundreds of years ago, and later abandoned. Some of these sites were recorded as early as the 1930s, and the locations remain on the base maps of archeological sites. Other sites were recorded in the 1950's and 1960's by archaeologists working on research projects. With the advent of the California Environmental Quality Act (CEQA) in the 1970s, additional sites were identified during project specific surveys. Recent archaeological digs, such as at the City Hall site and elsewhere have helped further our understanding of the settlement pattern for the earliest

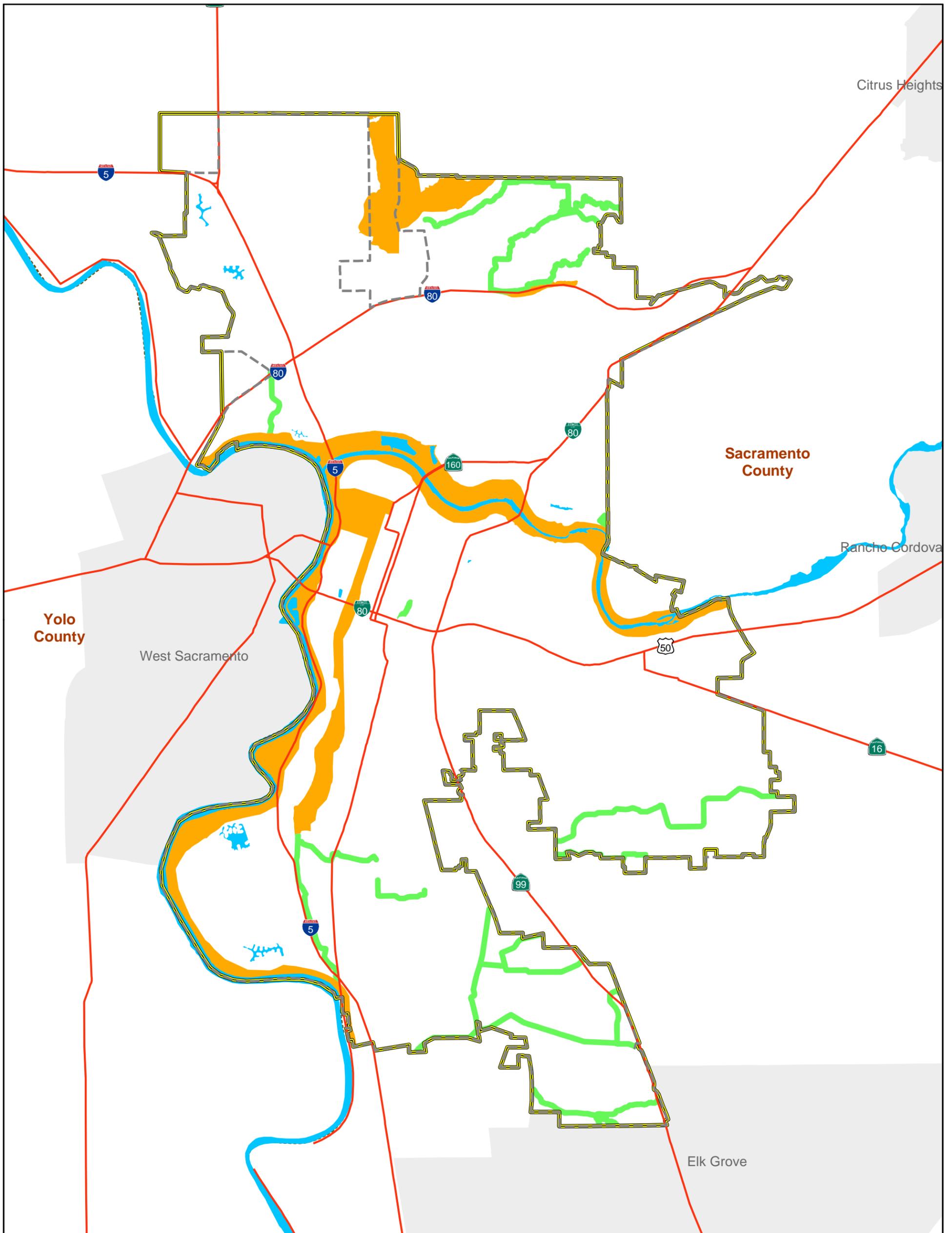
inhabitants of the area. In addition, our understanding of the prehistoric period lifeways, and detail regarding the dates of occupancy and use has also gotten better. Many of the sites had been impacted even prior to their recordation by development, farming and historic period impacts. Since their identification, some of the sites have been completely destroyed or substantially affected by land-leveling, development, and other urban activities.

Moderate Sensitivity. Creeks and other watercourses, and early high spots near waterways that seem likely to have been used for prehistoric occupation are areas of moderate sensitivity. Even sites where waterways may have existed in the past, but have now been paved over could be considered an archaeological resource due to the presence of “significant historic activities”. However, the chance of discovering artifacts on such sites is substantially lower. Many years ago, some of these waterways may have been surveyed for cultural resources, with negative results. Sites could still exist along these waterways, but may be obscured by siltation or later historic activities. While it is highly unlikely that a village would be found in a moderate sensitivity area small villages, campsites, or special use sites, occupied seasonally for the exploitation of certain food resources, are more likely to be found along the waterways.

Low Sensitivity. The remainder of the Policy Area may be considered of low sensitivity. It should be emphasized that low sensitivity indicates that it is unlikely that sites occur in these areas, but it does not rule out the possibility that a site could exist and be obscured through historic use and development or through natural processes, such as siltation. Again, it is unlikely that a village would be found, but it is more likely a small resource such as a campsite or special use site could exist.

A problem inherent with the development of a sensitivity map is that the North Central Information Center (NCIC) maps do not necessarily reflect what has happened to a site. Sites may be entirely destroyed or the subject of data recovery, but their location remains on the maps at the NCIC. These zones are shown as high sensitivity areas rather than researching the current condition of each site. Archeological surveys would still be required for all areas, except where major development has already occurred, and there are no visible original ground surfaces.

Historic Period Archeological Sites. There remains the issue of historic period archeological sites. The urbanized portions of the Policy Area are highly sensitive, and any new construction needs to consider the possibility for the presence of subsurface materials. Several recent projects in Sacramento have been the subject of extensive excavations of historic period sites, including the Embassy Suites, the Federal Courthouse Project, and the Plaza Lofts (Philadelphia House) Project. These sites have provided additional insight on the history of the development of the city of Sacramento, providing detail on the early residents and their lifeways. Each site excavated provides information on the occupants of the specific site, and the history of the use and occupation of that lot or city block. One example of an excavated block is the Federal Courthouse site at HI56, with excavations conducted in 1994. This block was the last surviving portion of Sacramento’s mid-nineteenth century Chinese district. The excavations yielded caches of domestic and commercial refuse associated with Chinese District Association boardinghouses that housed Chinese workers in the mid-1850s. The resulting analyses of the artifacts and historical research associated with the study provided information on the everyday lives of working-class Chinese pioneers.



Legend

Archaeological Sensitivity Level

High

Moderate

City Limit

County Boundary

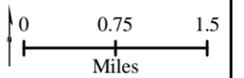
Other City Boundaries

Policy Area

Water

**Figure 6.4-1
Archaeological
Sensitivity**

Source: City of Sacramento 2007



On any project within the urban city, archival research must be undertaken to determine the use of the site through time, and test excavations or construction monitoring should occur. Outside of the urbanized areas, historic archeological materials may be present at any location formerly used or occupied over the past 150 years since the founding of the City of Sacramento. These areas may or may not coincide with locations of prehistoric sites. Historic maps are the key to discovering potential locations, while research and field surveys should be required as appropriate.

Brief Overview of Sacramento's Built Environment

The history of Sacramento has been shaped by its location near two rivers. The rivers provided transportation, irrigation, and food supply for early settlers. Periodic flooding helped shape the development of Sacramento to this day by providing plant and animal habitats, and helping to identify boundaries for the region. The creeks in the late 1800s were filled or diverted in the late 19th century. Historically, during Sutter's Era, however, Burn's Slough passed Sutter Fort (located in the Central City) on the north side, flowing southwest. Another small creek or slough may have passed on the south side of the fort, according to Sutter Fort's historian and archivist, Stephen Beck, which would have crossed the Policy Area. Recent excavations undertaken in Sacramento provide credible evidence that the Sacramento area was occupied at a very early time. Several villages have been identified near the confluence of the Sacramento and American Rivers.

Exploration into the Sacramento Valley began in the early 1800s via colonization and the establishment of missionaries. One of these explorers, a Spaniard name Gabriel Moraga is responsible for naming the valley region "Sacramento," which means "the Holy Sacrament". Latin influence in the region continued in the early 1800's, as Mexico gained independence from Spain and began sending explorers to Sacramento in 1822. While the area was technically under Mexican rule by 1824, the area was still inhabited by numerous Native American citizens.

While the Mexican Government occupied the region in the 1820's, the formal founder of the City of Sacramento is John Sutter. John Sutter arrived at the confluence of the Sacramento and American Rivers in 1839, settling in what was at the time Nisenan territory. The knoll on which Sutter placed his fort was an abandoned Indian mound. Beginning in 1824, under Mexican rule, land in California was divided into large parcels or Mexican land grants, referred to as ranchos. By 1846, eight land grants were claimed in Sacramento County, including New Helvitia, the first settlement in the Sacramento area, which was granted to John Sutter in 1839.

In 1848, Sutter hired William Warner to conduct a survey, which imposed a grid pattern on the land east of the embarcadero with east-west streets designated by numbers and north-south streets by letters of the alphabet. This original grid, which survives today, extended east from the Sacramento River (Front Street) to just beyond the Fort and south from Sutter's Slough (at approximately 6th and I Street) to where Broadway is today. As the "gateway" to the gold fields, mining and the business of supplying miners served as a basis for the city's early economy. By 1849, approximately 42,000 gold seekers reached California in search of gold helping Sacramento reach a population of approximately 12,000. At that time, the center commerce was at the port along the American River. However, the areas of importance gradually moved inland towards gold country. The city's location along the river ports and later the railroad played a prominent role in making Sacramento the principal mining, commercial, agricultural processing, and transportation center for the Central Valley and drew people to the area. Despite numerous floods and a major fire in 1852 that eliminated 90 percent of the city, Sacramento always recovered and rebuilt itself better than before.

In 1854, Sacramento became the State capital. The Capitol remained at a temporary location until 1874.

During the mid-1800s, the city faced severe flooding issues, with the majority of flooding coming from the American River. During heavy rains, the portion of the American River north of I Street would flood. To resolve this problem, the City dug a new mouth for the American River and elevated city streets approximately four to fifteen feet between I Street and L Street, from Front Street to 12th Street. This vast undertaking was completed in 1873 and has shaped the current downtown grid.

The city of Sacramento is also known as the birthplace of the California railroad system. The State's first railroad, Theodore Judah's Sacramento Valley Railroad, served as a link between Folsom gold fields and the city of Sacramento. With the Sacramento Valley Railroad serving as a spring board, Judah convinced the city's four major merchants to back an effort to establish a rail line linking California with the rest of the nation. These four merchants Leland Stanford, Collis Huntington, Mark Hopkins, and Charles Crocker, who came to be known as the Big Four, established the Central Pacific Railroad in 1861. Construction of the rail line began in 1862 and was ultimately completed in 1869. The transcontinental line helped establish Sacramento and the state as a primary distributor of agricultural goods to the rest of the country. Sacramento also became known as the largest railroad manufacturer and repair center west of the Mississippi. Construction of the transcontinental railroad ultimately increased the local population and the diversity of the region with new residents from the east coast, as well as Chinese immigrants who worked on the railroads.

However, in 1895, Sacramento still remained sparsely populated with the area dominated by agricultural uses. Battery operated streetcars were introduced in 1891, which helped with short range transportation. In an era before the automobile, development often followed streetcar lines. With the extension of the streetcar line, the neighborhood became quite fashionable and a number of palatial houses were located along Capitol Avenue by 1915. Many of these are now within the boundaries of the city's Capitol Mansions Historic District. As the character of the neighborhood had shifted to urban, the city began to see its first suburbs. The city's first recognized suburb, Oak Park, was originally a farm that was sold in 1885 and subdivided in 1887. Establishment of a streetcar line connecting the community to the city center helped establish the suburban growth trend of the 1900s. By 1911, the City of Sacramento annexed present day East Sacramento, Oak Park, Curtis Park, and Land Park, which tripled the city's size and added 15,000 people to its population. In 1924 North Sacramento, formerly known as Rancho Del Paso, was incorporated as a city.

A number of associational and religious buildings were constructed between 1900 and 1930 including Sacramento City College (1916), City Hall (1911), the City Library (1918), the Masonic Temple (1920), the Public Market (1923), the Elks Club building (1926), and the Memorial Auditorium (1927). During the same period, the City established many parks, hospitals, and commercial industries. The 1930's and 1940's saw the development of the Tower Bridge (1935) and the establishment of a strong military presence in the region. Mather Air Force Base (1918) and the Sacramento Air Depot (1935 renamed McClellan in 1939) provided a huge job base during the war, which triggered growth throughout the region. This rapid growth triggered a housing crisis which resulted in increased suburban settlement in the 1950s. This settlement was made easier due to the establishment of the automobile as the primary form of transportation. Use of automobiles drastically impacted the development of the city of Sacramento via the establishment of Interstate 5 between 2nd and 3rd Streets and reduced importance placed on the transcontinental railroad.

Establishment of the Sacramento Redevelopment Agency in the 1950s and their attempts at urban renewal projects such as the K Street mall also resulted in the destruction of many historic structures.

Themed Historic Context Statements

Appendix B includes four historic context statements that address the following historic and developmental themes in Sacramento:

- Agriculture
- State Government
- Railroads
- World War II, Transportation, and Redevelopment

City of Sacramento: Status of Historic Resources

The City of Sacramento has identified over 800 historic and cultural resources, which are documented in the Sacramento Register of Historic and Cultural Resources (Sacramento Register). As of January 2013, approximately 57 objects, structure, buildings, and sites in the city of Sacramento have been listed in the National Register; 96 have been listed on the California Register; 42 have been listed as California Landmarks; and six have been listed as California Points of Historical Interest.

National Register of Historic Properties

The city of Sacramento contains six historic districts which are listed on the National Register of Historic Places. Of those National Register Districts, five are also Sacramento Historic Districts. Those districts that are listed on both the National and Local Registers appear in italicized text below.

National Register Historic Districts

Alkali Flat Central

The Central Alkali Flat Historic District is concentrated on F, 10th, and 11th Streets and has one of the largest varieties of building styles, ages and types in the area. The district contains several early twentieth century buildings many of which exhibit Colonial Revival and Craftsman architectural styles.

Alkali Flat North

This small district focuses on residential homes centered on D Street between 11th Street and 12th Street. The prominent historic structure is the Maria Hastings Building. Unfortunately, many of the other buildings in the district have been demolished, thus limiting the viability of the district.

Alkali Flat West

This small district focuses on residential homes along the westernmost portion of the Alkali neighborhood, centered on G Street, extending north to D Street between 7th Street and 9th Street. There is a National Register property on-site with prepackaged homes. The area contains visually consistent buildings, most notably along E Street. Additional early 20th century apartment homes exist in the area as well.

Boulevard Park

This district extends north to south from the levee to I Street, with 20th Street serving as the western boundary and the eastern boundary extending from 23rd Street to 25th Street. The district is typified by Craftsman and Colonial Revival bungalows or cubes built between 1905 and 1915. Generally, the cube homes were constructed on the north-south boulevards, while the bungalows were constructed on the cross streets. The district includes a unique row of Victorian homes along the 23rd block of H Street. The majority of the buildings contain similar scale, heights, and setbacks.

Capitol Extension District

This district includes the Library and Courts Building, Office Building No. I (the Jesse Unruh Building), and the fountain plaza located directly west of the Capitol Building. The district creates a symmetrical monumental group that harmoniously fits into the original scheme of Capitol Park. The buildings were completed in 1928.

Old Sacramento National Historic Landmark District

This district, which is roughly bound by the Sacramento River, I Street, Interstate 5, and the Capitol Mall, is significant for its association with California's early gold rush days, the first intercontinental railroad, and the Pony Express. Sacramento was founded on the Embarcadero, Front Street in the district, and developed from there into the State Capital. This area contains some of Sacramento's earliest buildings, structures and sites.

Pending National Register Historic Districts

The Sacramento Register also identified two historic districts that appear eligible for listing on the National Register. The two districts have not been certified at the local level and are not, therefore, listed on the Sacramento Register.

California Reclamation District 1000

Reclamation District No. 1000 was created by an act of the State Legislature on April 8, 1911 and is comprised of the series of levees, drainage systems, and pumping plants located around Garden Highway. The perimeter levee system was created by the Natomas Company of California in order to create the Natomas Basin. The district includes a large pumping plant constructed in 1915 at the terminus of Second Bannon Sough.

Raised Streets and Hollow Sidewalks Historic District

This district is a historic vernacular landscape resulting from modifications made to the historic downtown area between 1862 and 1878 in response to cyclical flooding. The district is roughly bound by the Sacramento River, I Street, 12th Street, and L Street. The Raised Streets and Hollow Sidewalks District is defined by the raised streets, dipping alleyways, visual changes in street elevation, and hollow sidewalk segments.

California Register of Historical Resources

The city of Sacramento contains California Landmarks, California Points of Historical Interest, and resources which are listed on the California Register of Historical Resources. Some resources are listed on the California Register in more than one category. There are approximately 100 California landmarks, points of interest, and register properties located in the city of Sacramento.

California State Landmarks

The city of Sacramento currently contains 42 California State Landmarks. These landmarks are listed in Table 6-5 below.

Table 6-5 California State Landmarks

No.	Resource	Address
1	No. 525 Sutter's Fort	Sutter's Fort State Historic Park, 27 th & L Streets
2	No. 526 California's First Passenger Railroad	SW corner of Broadway & 10th Streets
3	No. 591 Sutter's Landing	NE corner of 28th & C Streets, Stanford Park
4	No. 592 New Helvetia Cemetery	NE corner of Alhambra Blvd & J Street
5	No. 593 Sutterville	Sutterville Rd, vicinity of Land Park Drive
6	No. 594 Site of China Slough	Southern Pacific Depot, NE corner of 4th & I Streets
7	No. 595 Eagle Theater	Old Sacramento State Historic Park, 925 Front Street
8	No. 596 Site of Home of Newton Booth	1015-17 Front Street
9	No. 597 What Cheer House	SE corner of Front & K Streets
10	No. 598 Site of State and Railroad (First)	Old Sacramento State Historic Park, NW corner of Front & K Streets
11	No. 599 E.B. Crocker Art Gallery	216 O Street
12	No. 601 Western Hotel	Parking lot, 200 feet NE of intersection of 2nd & K Streets
13	No. 602 Ebner's Hotel	116 1/2 K Street, Old Sacramento
14	No. 603 Lady Adams Building	117-19 K Street, Old Sacramento
15	No. 604 Site of Sam Brennan House	112 J Street, Old Sacramento
16	No. 605 Site of Sacramento Union	121 J Street, Old Sacramento
17	No. 606 B.F. Hastings Building	1000 2nd Street, plaque located on wall at 2nd St, between J & I Streets, Old Sacramento
18	No. 607 Adams and Company Building	1014 2nd Street, Old Sacramento
19	No. 608 Site of Orleans Hotel	1018 2nd Street, Old Sacramento
20	No. 609 D.O. Mills Bank Building	100 feet from SE corner of intersection of 2nd & J Streets, Old Sacramento
21	No. 610 Overton Building	Parking lot, 300 feet NE of intersection of 2nd & J Streets, Old Sacramento
22	No. 611 Original Sacramento Bee Building	Under N-bound off ramp of I-5, W side of 3rd Street between J & K Streets
23	No. 612 Site of Pioneer Mutual Volunteer Firehouse	200 feet NE of intersection of 3rd & J Streets
24	No. 613 Site of Congregational Church	915-6th Street
25	No. 614 Stanford-Lathrop House	Leland Stanford Mansion State Historic Park, 800 N Street
26	No. 633-2 Old Folsom Powerhouse – Sacramento Station 'A'	NE corner of 6th & H Streets
27	No. 654 Site of the first Jewish Synagogue owned by a Congregation on the Pacific Coast	In sidewalk, 7th St between Capitol Avenue & L Street
28	No. 654-1 Chevra Kaddisha (Home of Peace Cemetery)	3230 J Street
29	No. 666 Camp Union, Sutterville	No. 666 Camp Union, Sutterville
30	No. 697 Five Mile House – Overland Pony Express Route in California	On campus of California State University, 6000 J Street., left on

Table 6-5 California State Landmarks		
<i>No.</i>	<i>Resource</i>	<i>Address</i>
		State University Drive East to Guy West Bridge over-crossing & plaza. Plaque located in plaza.
31	No. 745 The Coloma Road – Sutter’s Fort	NE corner of 28th & L Streets
32	No. 780 First Transcontinental Railroad	Old Sacramento State Historic Park, Sacramento, California State Railroad Museum, rear lounge area
33	No. 780-8 First Transcontinental Railroad – Western Base of the Sierra Nevada	Haggin Oaks Municipal Golf Course, north side of clubhouse, 3645 Fulton Ave
34	No. 812 Old Sacramento	Old Sacramento State Historic Park, plaque located on wall at 2nd St between J & I Streets
35	No. 823 Governor’s Mansion	SW corner of 16th & H Streets
36	No. 869 Site of First & Second State Capitols at Sacramento	NW corner of 7th & I Streets
37	No. 872 California’s Capitol Complex	East of intersection of 10th Street and Capitol Mall
38	No. 900 Nisipowinan Village Site	Address restricted per Section 6254.10 of the California State Government Code
39	No. 934 Temporary Detention Camps for Japanese-Americans –Sacramento Assembly Center	Walerga Park, NW corner of Palm Ave & College Oak Drive
40	No. 967 California Almond Growers Exchange Processing Facility	1809 C Street
41	No. 991 State Indian Museum	2618 K Street
42	No. 1013 Site of the First African American Episcopal Church Established on the Pacific Coast	715 Seventh Street

Source: Office of Historic Preservation, 2013.

California Points of Historical Interest

There are six California Points of Historical Interest located in Sacramento. California Points of Interest do not typically have an associated address.

Table 6-6 California Points of Historical Interest		
<i>No.</i>	<i>Resource</i>	<i>Date Listed</i>
1	Curran Farmhouse	12/17/1985
2	Eastern Star	08/08/1991
3	George Hack House	08/05/1994
4	River Mansion	11/03/1969
5	St. Elizabeth’s Church	03/02/1983
6	Whitter Ranch (Originally Saylor Ranch)	05/08/1991

Source: Office of Historic Preservation, 2013.

California Register

The following table notes all of the properties in Sacramento which are listed on the California Register. Those properties that are also listed on the National Register are noted.

Table 6-7 California State Historic Resources

No.	Resource	Address	National Register
1	Calpak Plant No. 11/Del Monte Plant No. 11	1721 C Street	X
2	Anton Wagner Duplex	701 E Street	X
3	Hubbard-Upson House	1010 F Street	X
4	J. Neely Johnson House	1029 F Street	X
5	Van Voorhies House	925 G Street	X
6	Cranston-Geary Residence and Garage	2101 G Street	X
7	Julius Wetzlar House/Latriada Apartments	1021 H Street	X
8	Charles Lair House	1301 H Street	X
9	Gallatin Mansion/California Governor's Mansion	1503 H Street	X
10	Winters House	2324 & 2326 H Street	X
11	John T. Greene House	3200 H Street	X
12	Southern Pacific Railroad Company's Sacramento Depot and American Railway Express Building/Railway Express Agency Building	401 & 431 I Street	X
13	U.S. Post Office/Courthouse and Federal Building	801 I Street	X
14	Sacramento City Library	828 I Street	X
15	Travelers' Hotel	428 J Street	X
16	National Gold Bank of D.O. Mills & Company/Security Pacific	631 J Street	
17	Capitol National Bank/Crocker National Bank	700 J Street	
18	Coolot Company Building/Comstock Building	812 J Street	X
19	Ruhstaller Building	900 J Street	X
20	Sacramento Masonic Temple	1131 J Street	X
21	Public Market/Sheraton Grand Hotel	1230 J Street	
22	Sacramento Memorial Auditorium	1515 J Street	X
23	Ochsner Building/Sun Building	717 K Street	
24	S.H. Kress & Company/Dress Building	818 K Street	
25	Hale Brothers & Company/River City Bank	825 & 831 K Street	X
26	Montgomery Ward Company/Department of Rehabilitation	830 K Street	
27	Mohr & Yoerk Building/Ransohoff's	1031 K Street	
28	Eastern Star Hall	2719 K Street	X
29	Hotel Senator	1121 L Street	X
30	Sutter's Fort	2701 L Street	X
31	Capital Park	L Street to N Street, between 10 th & 15 th	X
32	Stanford-Lathrop House/Stanford Mansion	800 N Street	X
33	Business & Professional Building/Consumer Affairs Building	1020 N Street	
34	Public Works Office Building	1120 N Street	
35	Motor Vehicle Building/Department of Food and Agriculture	1220 N Street	
36	Westminster Presbyterian Church	1300 N Street	X
37	E.B.Crocker Art Gallery	216 O Street	X
38	August A. Heilbron House	704 O Street	X
39	No Name	1720 Q Street	
40	W.P. Fuller Building	1015 R Street	
41	United States Rubber & Tire Company	1026 R Street	
42	Sacramento Warehouse Company/State Warehouse	1026 R Street	
43	Piggly-Wiggly Company/High-line Electric Company	1119 R Street	
44	No Name	1213 R Street	
45	SMUD Headquarters Building	6301 S Street	X

Table 6-7 California State Historic Resources			
<i>No.</i>	<i>Resource</i>	<i>Address</i>	<i>National Register</i>
46	Mary Haley Galarneau House	922-24 T Street	X
47	Goethe House/Julia Morgan House	3731 T Street	X
48	No Name	3460 2 nd Avenue	
49	Lewis Building/Woodruff Building	3440-3050 3 rd Avenue	
50	Thompson-Diggs Company	1800 3 rd Street	
51	Fire Station No. 6/Oak Park Fire Station	3414 4 th Avenue	X
52	Dunlap's Dining Room	4322 4 th Avenue	X
53	Sacramento Hall of Justice/Sacramento City Police Department	813 6 th Street	X
54	Pioneer Hall	1009 7 th Street	
55	Merchants National Bank of Sacramento	1015 7 th Street	X
56	Mesick House	517 8 th Street	X
57	Kuchler Row/Wheeler Houses	608-614 10 th Street	X
58	California State Capitol	10 th Street, between L and N Streets	X
59	California's Capitol Complex	East of intersection of 10 th Street & Capitol Mall	X
60	Blue Anchor Building	1400 10 th Street	X
61	Pumping Station #2	915 11 th Avenue	
62	Sacramento BPOE Temple No. 26/Sacramento Elks Lodge	921 11 th Street	X
63	Hotel Regis	1106 11 th Street	X
64	Rochdale Building	1801 11 th Street	
65	Fred Mason-Shirt Store & Factory/Farley's Grocery	528/530 12 th Street	
66	Firestone Tire Warehouse	1811 12 th Street	
67	Firehouse No. 3/Engine Company No. 3 Firehouse	1215 19 th Street	X
68	No Name	1809 19 th Street	
69	Edward P. Howe, Jr. House	2215 21 st Street	X
70	Sacramento City College Municipal Water Tower	3581 23 rd Street	
71	Sacramento Bank Building/Citizen's Bank/ Christian Fellowship	3418 Broadway	X
72	Diepenbrock House	2315 Capitol Avenue	
73	Old Tavern/Sacramento Brewery/ Sutter Hospital Personnel	2801 Capitol Avenue	X
74	California State Library/ Library and Courts Building	914 Capitol Mall	
75	Office Building One	915 Capitol Mall	
76	Perkins Ranch/Perkins Residence	8280 Folsom Blvd	
77	C.K. McClatchy Senior High School	3066 Freeport Blvd	X
78	Sacramento Junior College Annex and Extensions/ Sacramento City College	3835 Freeport Blvd	X
79	Delta King River Boat	1000 Front Street	
80	Sacramento River Dox Complex	1601 Garden Highway	
81	Arthur Sweet House	2215 Grove Avenue	
82	PG&E Station "B"/ Riverfront Station	451 Jibboom Street	X
83	Theodore Judah School	3919 McKinley Blvd	X
84	J.C. Carly House/ Delinch Residence	2761 Montgomery Way	X
85	Brighton Substation	2901 Power Inn Road	
86	Hudson-Cipa-Wolf Ranch	Sorento Road	

Table 6-7 California State Historic Resources

No.	Resource	Address	National Register
87	Libby McNeil/ Libby Fruit & Vegetable Company	1724 Stockton Blvd	X
88	Colonial Theatre	3522 Stockton Blvd	
89	A.W. Clifton House/ Compton Mansion	4400 Stockton Blvd	
90	I Street Bridge	Sacramento River & I Street	X
91	J Street Wreck	Foot of J Street in the Sacramento River	X
92	Joe Mound	Restricted	X
93	Jibboom Street Bridge	Jibboom Street	
94	R Street Railroad Track	SW Corner of 3 rd & R Streets	
95	Nisipowian Village Site	Restricted: River District Area	X
96	Tower Bridge	Sacramento River & Capitol Avenue	X

Source: Sacramento Register of Historic and Cultural Resources, December 2011.

Sacramento Register

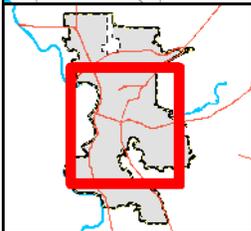
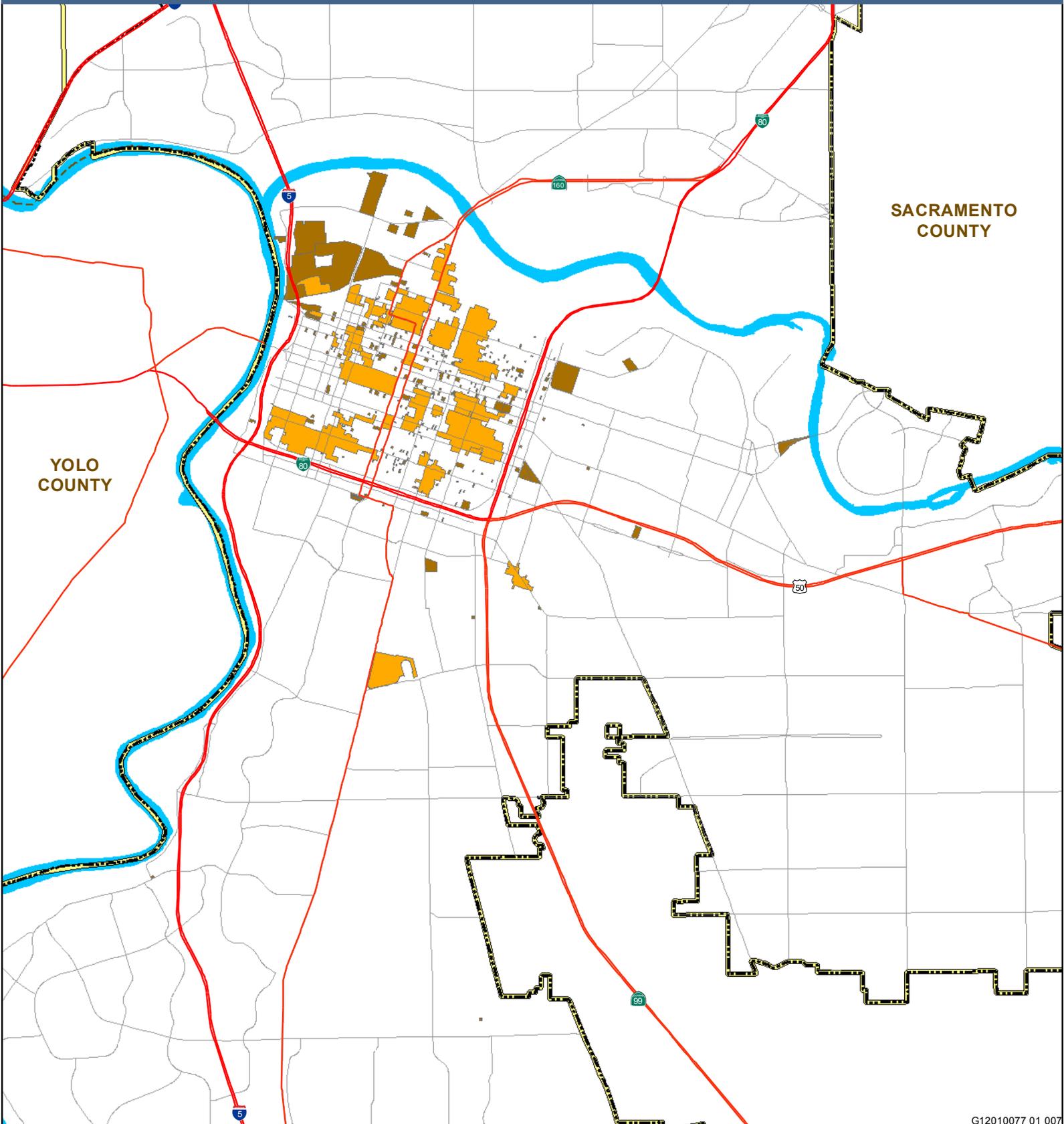
The City of Sacramento has designated 31 Local Historic Districts (see Figure 6-9) within the Policy Area. Below is a list and brief description of each of the designated districts. Those districts that are also listed in the National Register of Historic Places are italicized.

Sacramento Register Historic Districts

1200-1300 Q Street. This district is a two block row of high basement cottages located south of Q Street. The district is primarily residential and surrounded by incompatible uses. The buildings are similar in color, building material, texture, setback and size. The buildings were constructed between 1885 and 1895 and are complemented by mature trees lining the streets.

12th Street Commercial. This district is a two and a half block row along 12th Street extending south to E to G Streets. The site served as a primary route to gold fields in the late 19th century. The building construction dates in the area range from 1895 to about 1912. The gridline remains intact, but the roads were repaved in the 20th Century to accommodate automobiles.

North 16th Street. This district contains a concentration of industrial and commercial warehouses located on North 16th Street between the railroad right of way to the south and Sproule Avenue to the north. Constructed along railroad spurs and major vehicular transportation routes, the typically brick buildings include decorative features such as cornices, parapets and blind arches.



Legend

Historic Districts	Waterways
Landmark Parcels	City Limits
Major Roads	Policy Area
Highways	County Boundary

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20th and N Street. This district features simple cottages located south of Capitol Avenue to O Street, between 20th Street and 21st Street. It is believed that the cottages were constructed in the 1880s or 1890s and were originally intended for servants.

Alkali Flat Central. The Central Alkali Flat Historic District is concentrated on F, 10th, and 11th Streets and has one of the largest varieties of building styles, ages and types in the area. The district contains several early twentieth century buildings many of which exhibit Colonial Revival and Craftsman architectural styles.

Alkali Flat North. This small district focuses on residential homes centered on D Street between 11th Street and 12th Street. The prominent historic structure is the Maria Hastings Building. Unfortunately, many of the other buildings in the district have been demolished, thus limiting the viability of the district.

Alkali Flat West. This small district focuses on residential homes along the westernmost portion of the Alkali neighborhood, centered on G Street, extending north to D Street between 7th Street and 9th Street. There is a National Register property on-site with prepackaged homes. The area contains visually consistent buildings, most notably along E Street. Additional early 20th century apartment homes exist in the area as well.

Alkali Flat South. This small district focuses on residential homes centered on G Street between 10th Street and 12th Street. The District is characterized by a row of small Italianate and Queen Anne houses that are of a similar size, scale, form, and age. The design details of the homes create a visually consistent community.

Boulevard Park. This district extends north to south from the levee to I Street, with 20th Street serving as the western boundary and the eastern boundary extending from 23rd Street to 25th Street. The district is typified by Craftsman and Colonial Revival bungalows or cubes built between 1905 and 1915. Generally, the cube homes were constructed on the north-south boulevards, while the bungalows were constructed on the cross streets. The district includes a unique row of Victorian homes along the 23rd block of H Street. The majority of the buildings contain similar scale, heights, and setbacks.

Bungalow Row. This district extends from K Street south to Q Street with 22nd Street serving as the western boundary and the eastern boundary extending from 27th Street to 29th Street. The district is typified by Craftsman bungalows built between 1900 and 1915. Generally the buildings contain similar scale, height, size, design, and materials.

C Street Commercial. This one block district contains structures built in 1920. Each building lacks distinguishing qualities on an individual level, but collectively they represent the look of the commercial buildings of the era. The buildings contain similar scale, style, and materials.

C Street Industrial. This one block district contains structures built between 1914 and 1938. Each building varies in style but accurately reflects the industrial development of the area, particularly due to its proximity to the railroad (on the north). The buildings are primarily Vernacular and Modern, with some classical ornamentation.

Capitol Avenue. This district extends north to south from just south of L Street to Q Street, with 17th Street serving as the western boundary and 19th Street serving as the eastern boundary. The district was constructed during the 1870s and the 1890s and is home to the most Italianate structured buildings than any other part of the city. There are also a fair number of Queen Anne and Colonial Revival homes constructed in the 1890s. The buildings are similar in color, building material, and setback and are complemented by mature trees that line the streets.

Capitol Extension District. This district includes the Library and Courts Building, Office Building No. I (the Jesse Unruh Building), and the fountain plaza located directly west of the Capitol Building. The district creates a symmetrical monumental group that harmoniously fits into the original scheme of Capitol Park. The buildings were completed in 1928.

Capitol Historic. This district is anchored by the California State Capitol Building, which was constructed between 1860 and 1874 using the Classic Revival style. The site is bounded by L Street on the north, 9th Street and the Capitol Avenue on the west, N Street on the south, and 15th Street on the east. In association with the Capitol building, the district also contains Capitol Park, which contains various other government buildings with historic character, including the Insectary Building. This district is surrounded by external historic structures in its immediate vicinity.

Capitol Mansions. The Capitol Mansions Historic District has meandering boundaries that extend from 27th Street in the east to 21st Street in the west, from the L and K Street alleys on the north to the N Street alley on the south. The majority of the buildings are large and stately structures with a Queen Anne or Classic Box style. The buildings were originally single family homes, but often serve as offices. Two church landmarks also exist in this district.

Cathedral Square. This district is anchored by the Cathedral of the Blessed Sacrament, which was constructed in 1887. The site is bounded by the alley south of J Street on the north, a meandering boundary from 10th Street to 11th Street on the west, L Street on the south, and 12th Street on the east. The height of the cathedral dominates the viewscape of the area.

Central Shops. The Central Shops historic district, located north of the Southern Pacific railroad tracks at 401 I Street, served as the principal shops of the Pacific Lines of the Southern Pacific system between 1868 and 1990. These shops oversaw subsidiary shops from Portland, Oregon; Ogden, Utah; San Francisco, California; and Los Angeles, California. The shop buildings include representative examples of mid-19th to late Victorian industrial architecture.

Cesar Chavez/Plaza Park Central Business District. This district is located in the core of the historical and existing downtown business district. The majority of eligible structures still standing were built between 1910 and 1930. In addition to buildings, the J Street corridor, the intersecting arterials, and accompanying sidewalks still contain evidence of historic structure below ground level or maintain authenticity with cobblestone roads and curbstones still in place.

Fremont Park. This one block district is anchored by Fremont Park. The buildings within the district were constructed between 1890 and 1910. The buildings contain Italianate and Craftsman architecture, which provide a variety of styles, without detracting from the history of the district. The site is bounded by the alley north of R Street on the south, 15th Street on the west, P Street on the north, and 16th Street on the east.

Marshall Park. This district extends north to south from I Street to just south of J Street, between 26th Street and 28th Street. The homes in the district were constructed between 1895 and 1900, with primarily Queen Anne structures and some Colonial Revival homes. Both single-family residential and apartment homes are in the Marshall Park District. The buildings are compatible with the surrounding residential uses.

Memorial Auditorium. This district is anchored by Memorial Auditorium (15th Street and J Street) and extends down J Street to 17th Street. The surrounding buildings are mixed use commercial and residential that have been restored or rehabilitated in the last few years. The surrounding buildings complement the scale and building material of the auditorium.

Merchant Street. This district extends north to south from I Street to K Street, between 7th Street and 8th Street. This area served as an early 20th century banking center and is highlighted by Pioneer Hall, which has been at its existing location since 1868. The Merchants National Bank Building was also constructed in 1921, further lending to the site's historicity. The architecture of the district share a classic style and consistent use similar building materials.

Oak Park. This district is contained by roughly triangular boundaries defined by 4th Avenue on the south, 33rd Street on the west and Broadway, which runs diagonally to the east. The Oak Park District represents the commercial core of the neighborhood, which was annexed to the City in 1911. The Libby, McNeil & Libby cannery at Alhambra and Stockton Boulevard and the California Highway Commission repair shops at 34th and R Streets historically employed many Oak Park residents.

Poverty Ridge. The Poverty Ridge district extends from S Street on the north to W Street on the south, bounded on the west 20th Street and 21st Street, and by 23rd Street on the east. The homes in the district were large prairie style units constructed at about 1915 or later. During the time of construction, the prairie style units were home to some of Sacramento's wealthier families. The area also contains many Craftsman Bungalow homes in the block bounded by S Street and T Street, and 20th and 21st Streets. Most of the southern part of the district was constructed post-1920. There are also a fair number of Queen Anne and Colonial Revival homes constructed in the 1890s. The residential buildings are incompatible with the surrounding industrial uses.

R Street. The buildings in this district are located on R Street from 10th Street to 12th Street. The area was once one of the focal points for the city during the railroad era. The buildings were constructed between 1910 and 1930 and were used primarily for warehousing, distribution and light industrial.

Sacramento City College. This district consists of five buildings on the College Campus that were designed by famed Sacramento architect Harry J. Devine in the 1920s. Devine designed Library and Classrooms building, the Gymnasium, the Fine Arts Building, the Engineering Technology Building, and the Aeronautical Addition. The buildings were constructed with PWA Moderne style components and share building material, size, scale, and design elements with each other. Later alterations to the campus have changed the district's setting, but have had a minimal effect on the historic integrity of the site.

South Side. The South Side Historic District is the largest historic district in the Policy Area, extending from 3rd Street to 16th Street, bounded by S Street and W Street to the north and south, respectively. The district is divided by South Side Park. West of the park are simple high basement

cottages and some abandoned lots. While some of the existing structures lack historic integrity individually, collectively they provide a historic setting. The homes in this part of the district were constructed between 1895 and 1905, with Queen Anne structures being the most dominant. These structures have a consistent height, scale, spacing, setback, material composition, and texture. East of the park, the district maintains a similar character, but is often impacted by newer apartments. Also there are larger Queen Anne and Revival style homes, rather than the smaller cottages. As one moves further to the east, the structures begin to change to more of a bungalow style.

Washington. The Washington District is another large historic district in the Policy Area extending from C Street to G Street, bounded by 12th Street and 15th Street to the east and west, respectively. The structures in this district were constructed between the 1870s and the 1900s. The area had a variety of styles represented, including Italianate, Eastlake, Queen Anne, Colonial Revival, and other vernacular structures. These structures have a consistent high basement structure and are both single family and multi-family structures. The area, like Alkali Flat, has been encroached over the last few years by increased commercial development.

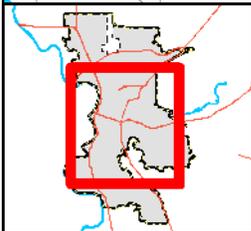
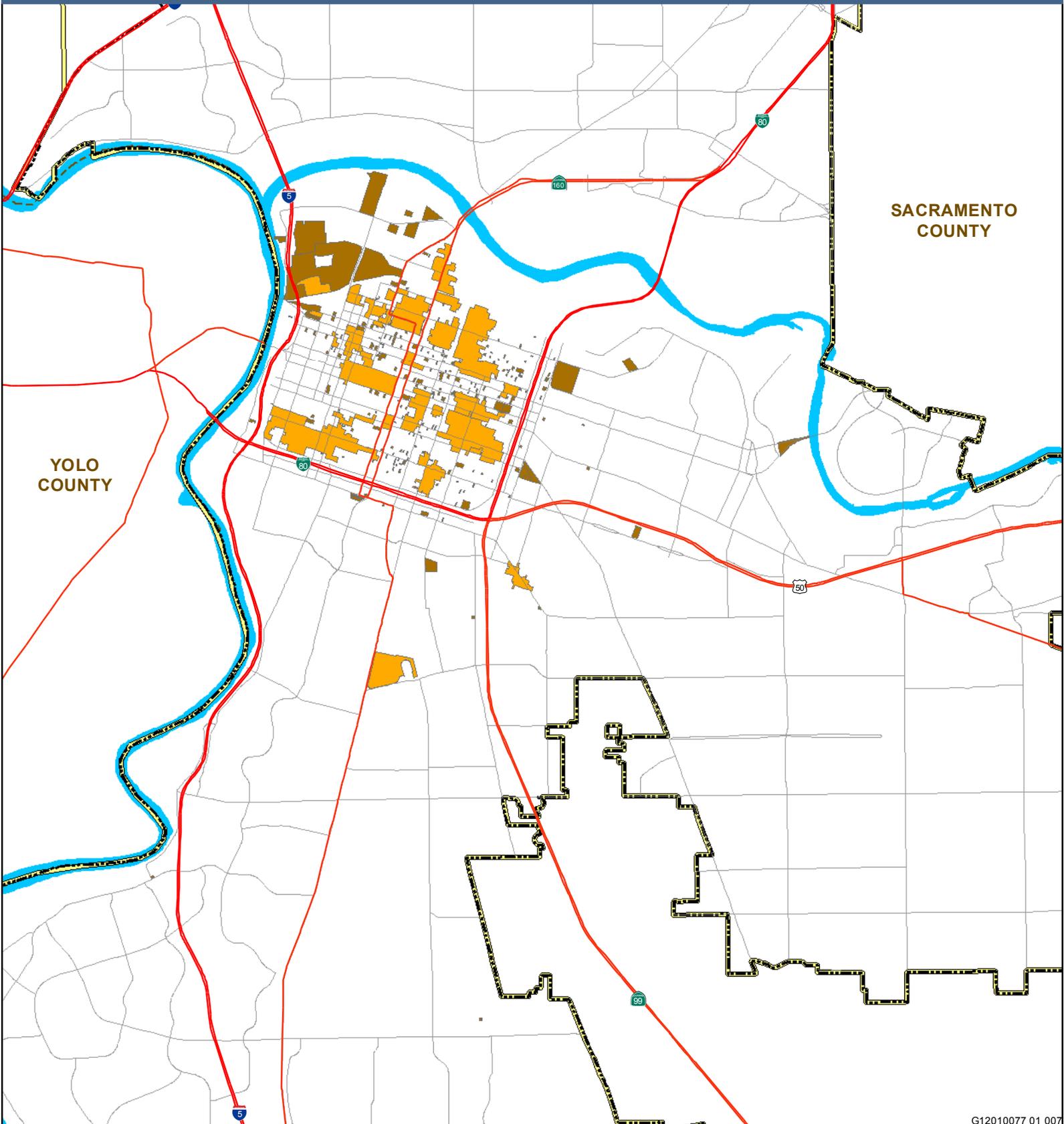
Washington School. The Washington School district is another large historic district in the Policy Area extending from D Street to G Street, bounded by 17th Street and 19th Street to the east and west, respectively. The district is located in a transitional area with working class cottages and a mix of larger homes and apartments. The structures in this district were constructed between the 1880s and the 1900s. The area had a variety of styles represented, including Eastlakes, Queen Anne, Colonial Revival, and other vernacular structures. After 1905 additional Cube types and bungalows began appearing in the neighborhood. These residential structures are complemented by the Washington School and a large row of older trees.

Winn Park. The Winn Park District is located just south of the Capitol Mansions Historic District, extending from south of Capitol Avenue to south of Q Street. The district is bounded by 21st and 22nd Streets to the west and 25th, 28th and 29th Streets to the east. The buildings in this district are primarily residential ranging from the late 19th century to the 1930s and 1940s. The area has a variety of style representative styles represented, including Queen Anne, Colonial Revival, and Classic Revival.

Sacramento Register Properties

Appendix B summarizes the historic and cultural properties identified in the December 2011 Sacramento Register. The properties are organized by address in the following categories: “Numbered” streets; “Lettered” streets; “Name” streets; and Bridges, Memorials, Statues, Monuments, Parks and Sites.

The majority of Sacramento’s Landmarks are located within the Central City. The map in Figure 6-10 highlights the location of these landmarks in the Central City.



Legend

Historic Districts	Waterways
Landmark Parcels	City Limits
Major Roads	Policy Area
Highways	County Boundary

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0 0.5 1 Miles

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Regulatory Background

Federal

National Historic Preservation Act

The National Historic Preservation Act of 1966, 80 Stat. 915, 16 U.S.C. 470 et seq., as amended, authorizes the Secretary of the Interior to expand and maintain a National Register of districts, sites, buildings, structures, and objects significant in American history, architecture, archeology, engineering and culture. The National Register is an authoritative guide to be used by Federal, State, and local governments, private groups and citizens to identify the Nation's cultural resources and to indicate what properties should be considered for protection from destruction or impairment.

A "historic property" is any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places maintained by the Secretary of the Interior. Historic properties include artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization and that meet the National Register criteria (36 Code of Federal Regulations (CFR) Part 800 Protection of Historic Properties, Section 800.16 Definitions l 1).

Overseen by the National Park Service (NPS), under the Department of the Interior, the National Register was authorized under the National Historic Preservation Act as amended. Its listings encompass all National Historic Landmarks as well as historic areas administered by NPS.

National Register guidelines for evaluation of significance were developed to be flexible and to recognize accomplishments of all who have made significant contributions to the nation's history and heritage. Its criteria were designed to guide State and local governments, Federal agencies, and others in evaluating potential entries in the National Register. For a property to be listed or determined eligible for listing, it must be demonstrated as possessing integrity and meeting at least one of the following criteria. It must be demonstrated that:

"The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:

- a. Associated with events that have made a significant contribution to the broad patterns of our history; or
- b. Associated with the lives of persons significant in our past; or
- c. Embodies the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- d. Has yielded, or may be likely to yield, information important in prehistory or history."

Integrity is defined in National Register guidance, *How to Apply the National Register Criteria*, as "the ability of a property to convey its significance. To be listed in the National Register...a property

must not only be shown to be significant under the National Register criteria, but it also must have integrity” (NPS 1990). The seven aspects of integrity are location, design, setting, materials, workmanship, feeling, and association.

The National Register guidance asserts that properties be at least 50 years old to be considered for eligibility. Properties completed less than 50 years before evaluation must be “exceptionally important” (Criteria Consideration G) to be considered eligible for listing.

Section 106 of the NHPA. Section 106 of the National Historic Preservation Act of 1966, as amended, states that:

The head of any Federal agency having direct or indirect jurisdiction over a proposed Federal or Federally assisted undertaking in any State and the head of any Federal department or independent agency having authority to license any undertaking shall, prior to the approval of the expenditure of any Federal funds on the undertaking or prior to the issuance of any license, as the case may be, take into account the effect of the undertaking on any district, site, building, structure, or object that is included in or eligible for inclusion in the National Register.

The statute also states that the head of the responsible Federal agency shall provide the Advisory Council on Historic Preservation (ACHP) the opportunity to comment on those undertakings. Regulations issued by the ACHP, the Code of Federal Regulations at 36 CFR Part 800, “Protecting Historic Properties,” guide the Section 106 process.

Under Section 106, Title 36 Code of Federal Regulations (CFR) Part 800 defines adverse effects on historic properties as follows:

Criteria of adverse effect. An adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property’s location, design, setting, materials, workmanship, feeling or association. Consideration shall be given to all qualifying characteristics of a historic property, including those that may have been identified subsequent to the original evaluation of the property’s eligibility for the National Register. Adverse effects may include reasonably foreseeable effects caused by the undertaking that may occur later in time, be farther removed in distance or be cumulative.

According to 36 CFR Section 800.5(a) (2), examples of adverse effects on historic properties include, but are not limited to:

- i. Physical destruction of or damage to all or part of the property;
- ii. Alteration of a property, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation and provision of handicapped access, that is not consistent with the Secretary’s Standards for the Treatment of Historic Properties (36 CFR part 68) and applicable guidelines;
- iii. Removal of the property from its historic location;

- iv. Change of the character of the property's use or of physical features within the property's setting that contribute to its historic significance;
- v. Introduction of visual, atmospheric or audible elements that diminish the integrity of the property's significant historic features;
- vi. Neglect of a property which causes its deterioration, except where such neglect and deterioration are recognized qualities of a property of religious and cultural significance to an Indian tribe or Native Hawaiian organization; and
- vii. Transfer, lease, or sale of property out of Federal ownership or control without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property's historic significance(36 CFR Part 800.5 (a) (2)).

Department of Transportation Section 4(f)

Section 4(f) is national policy established as a part of the U.S Department of Transportation Act of 1966 that stipulates that the Federal Highway Administration (FHWA) will not approve any program or project that requires the “use” of any publicly owned public park, recreation area, wildlife refuge or historic sites unless;

- There is “no feasible and prudent alternative to the project,”
- The project includes “all possible planning to minimize harm to the project.
- Section 4(f) applies to all transportation agencies within the U.S Department of Transportation, which include;
- Federal Highway Administration (FHWA) – Funds Highway and bridge projects
- Federal Transit Administration
- Coast Guard – Owns and protects many historic lighthouses and has regulatory authority affecting bridges.

Section 4(f) does not apply to private institutions and individuals, even if the said areas are open to the public. However, if a governmental body has a proprietary interest in the land for instance fee ownership, drainage easements or wetland easement, it can be considered “publicly owned” and thus Section 4 (f) applies.

The Secretary of the Interior's Standard for the Treatment of Historic Properties

The (U.S.) Secretary of the Interior has established standards for the treatment of historic properties. The 1995 Secretary of the Interior's Standard for the Treatment of Historic Properties document outlines specific standards and guidelines for the preservation, rehabilitation, restoration, and reconstruction of historic properties. Preservation standards provide guidelines by which to sustain the integrity of a historic resource. Rehabilitation standards guide the compatible reuse of a historic resource and retain its character-defining features. Restoration standards guide the process of restoration of a historic resource to a particular period of time. Reconstruction standards and guidelines apply to new developments that replicate a non-surviving site, landscape, building, structure or object in its historic location.

The Secretary of the Interior's Standards for Rehabilitation. The Secretary of the Interior's Standards for Rehabilitation (the Standards) are the benchmark by which Federal agencies and many local government bodies evaluate rehabilitative work on historic properties. The Standards are a useful analytic tool for understanding and describing the potential impacts of substantial changes to historic resources. Compliance with the Standards does not determine whether a project would cause a substantial adverse change in the significance of an historic resource. Rather, projects that comply with the Standards benefit from a regulatory presumption that they would have a less-than-significant adverse impact on an historic resource. Projects that do not comply with the Standards may or may not cause a substantial adverse change in the significance of an historic resource.

The Standards acknowledge that some changes are typically necessary to ensure the continued use of a historic property. Regarding alterations and additions for the new use of a historic property, the guidelines for Rehabilitation state:

Some exterior and interior alterations to a historic building are generally needed to assure its continued use, but it is most important that such alterations do not radically change, obscure, or destroy character-defining spaces, materials, features, or finishes. Alterations may include providing additional parking space on an existing historic building site; cutting new entrances or windows on secondary elevations; inserting an additional floor; installing an entirely new mechanical system; or creating an atrium or light well. Alteration may also include the selective removal of buildings or other features of the environment or building site that are intrusive and therefore detract from the overall historic character. The construction of an exterior addition to a historic building may seem to be essential for the new use, but it is emphasized in the Rehabilitation guidelines that such new additions should be avoided, if possible, and considered only after it is determined that those needs cannot be met by altering secondary, i.e., non-character-defining interior spaces. If, after a thorough evaluation of interior solutions, an exterior addition is still judged to be the only viable alternative, it should be designed and constructed to be clearly differentiated from the historic building and so that the character-defining features are not radically changed, obscured, damaged, or destroyed.

The 10 Rehabilitation Standards are listed below:

1. A property shall be used for its historic purpose or be placed in a new use that requires minimal change to the defining characteristics of the building and its site and environment.
2. The historic character of a property shall be retained and preserved. The removal of historic materials or alteration of features and spaces that characterize a property shall be avoided.
3. Each property shall be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or architectural elements from other buildings, shall not be undertaken.
4. Most properties change over time; those changes that have acquired historic significance in their own right shall be retained and preserved.

5. Distinctive features, finishes, and construction techniques or examples of craftsmanship that characterize a property shall be preserved.
6. Deteriorated historic features shall be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature shall match the old in design, color, texture, and other visual qualities and, where possible, materials. Replacement of missing features shall be substantiated by documentary, physical, or pictorial evidence.

Chemical or physical treatments, such as sandblasting, that cause damage to historic materials shall not be used. The surface cleaning of structures, if appropriate, shall be undertaken using the gentlest means possible.

Significant archeological resources affected by a project shall be protected and preserved. If such resources must be disturbed, mitigation measures shall be undertaken.

New additions, exterior alterations, or related new construction shall not destroy historic materials that characterize the property. The new work shall be differentiated from the old and shall be compatible with the massing, size, scale, and architectural features to protect the historic integrity of the property and its environment.

New additions and adjacent or related new construction shall be undertaken in such a manner that if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.

Federal Historic Preservation Tax Incentives Program

The National Park Service and the Internal Revenue Service, in partnership with the State Office of Historic Preservation, operates the Historic Preservation Tax Incentives program. The 20 percent income tax credit is available for the “rehabilitation of historic, income-producing buildings that are determined by the Secretary of the Interior, through the National Park Service, to be “certified historic structures.” A 10 percent tax credit is available for “the rehabilitation of buildings placed in service before 1936.” Rehabilitation must comply with the Secretary of the Interior’s Standards for Rehabilitation.

State

California Register of Historical Resources

The California Register of Historical Resources (California Register) is an inventory of significant architectural, archaeological, and historical resources in the State of California. Resources can be listed in the California Register through a number of methods. State Historical Landmarks and National Register-listed properties are automatically listed in the California Register. Properties can also be nominated to the California Register by local governments, private organizations, or citizens. The evaluative criteria used by the California Register for determining eligibility are closely based on those developed by the National Park Service for the National Register of Historic Places.

In order for a property to be eligible for listing in the California Register, it must be found significant under one or more of the following criteria.

- Criterion 1 (Events): Resources that are associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States.
- Criterion 2 (Persons): Resources that are associated with the lives of persons important to local, California, or national history.
- Criterion 3 (Architecture): Resources that embody the distinctive characteristics of a type, period, region, or method of construction, or represent the work of a master, or possess high artistic values.
- Criterion 4 (Information Potential): Resources or sites that have yielded or have the potential to yield information important to the prehistory or history of the local area, California, or the nation.

Resources eligible for the National Register are automatically listed in the California Register of Historical Resources (OHP, 2001).

California State Landmarks

Designated California Historical Landmarks are numbered sequentially as they are listed by the State Historical Resources Commission. California Historical Landmarks numbered 770 and above are automatically listed in the California Register. According to PRC Section 5031(a), to be eligible for California Historical Landmark designation, a property must be of statewide historical importance and must demonstrate its statewide significance by meeting one of the following three requirements:

1. The property is the first, last, only, or most significant historical property of its type in the region. The regions are Southern California, Central California, and Northern California. If a property has lost its historic appearance (integrity), it may still be listed as a site.

The property is associated with an individual or group having a profound influence on the history of California. The primary emphasis should be the place or places of achievement of an individual. Birthplace, death place, or place of interment shall not be a consideration unless something of historical importance is connected with the person's birth or death. If a property has lost its historic appearance (integrity), it may still be listed as a site.

The property is a prototype of, or an outstanding example of, a period, style, architectural movement, or construction, or...it is one of the more notable works, or the best surviving work in a region of a pioneer architect, designer, or master builder.

An architectural landmark must have excellent physical integrity, including integrity of location. An architectural landmark generally will be considered on its original site, particularly if its significance is basically derived from its design relationship to its site.

Note: Only preeminent examples will be listed for architectural importance. Good representative examples of a style, period, or method of construction are more appropriately nominated to other registration programs.

California Points of Historical Interest

California Points of Historical Interest include “sites, buildings, features, or events that are of local (city or county) significance and have anthropological, cultural, military, political, architectural, economic, scientific or technical, religious, experimental, or other value” (Office of Historic Preservation 2008). Points of Historical Interest designated after December 1997 and recommended by the State Historical Resources Commission are also listed in the California Register. To be designated, a property must be demonstrated to meet at least one of the following criteria: the first, last, only, or most significant of its type within the local geographic region (city or county).

Associated with an individual or group having a profound influence on the history of the local area.

A prototype of, or an outstanding example of, a period, style, architectural movement or construction or is one of the more notable works or the best-surviving work in the local region of a pioneer architect, designer, or master builder.

California Historical Building Code

The purpose of the California Historical Building Code (CHBC) is to provide alternative regulations for the preservation, restoration, rehabilitation, relocation or reconstruction of buildings or structures designated as qualified historical buildings or properties by a local, State or Federal jurisdiction (as defined in Section 8-218 of Division 13, Part 2.7 of Health and Safety Code). The CHBC defines a “qualified historic structure” as:

Any building, site, structure, object, district or collection of structures, and their associated sites, deemed of importance to the history, architecture or culture of an area by an appropriate local, State or Federal governmental jurisdiction. This includes designated buildings or properties on, or determined eligible for, official national, State or local historical registers or official inventories, such as the National Register of Historic Places, California Register of Historical Resources, State Historical Landmarks, State Points of Historical Interest, and officially adopted city or county registers, inventories, or surveys of historical or architecturally significant sites, places or landmarks.

The CHBC’s standards and regulations are intended to

Facilitate the rehabilitation or change of occupancy so as to preserve their original or restored elements and features, to encourage energy conservation and a cost effective approach to preservation, and to provide for reasonable safety from fire, seismic forces or other hazards for occupants and users of such buildings, structures and properties and to provide reasonable availability and usability by the physically disabled.

California Environmental Quality Act

The California Environmental Quality Act (CEQA) is State legislation (PRC Section 21000 et seq.), which provides for the development and maintenance of a high quality environment for the present-day and future through the identification of significant environmental effects. CEQA applies to “projects” proposed to be undertaken or requiring approval from State or local government agencies. “Projects” are defined as “...activities which have the potential to have a physical impact on the environment and may include the enactment of zoning ordinances, the issuance of conditional use permits and the approval of tentative subdivision maps.” Historic and cultural resources are considered to be part of the environment. CEQA equates a “substantial adverse change” in the significance of a historical resource with a significant effect on the environment (PRC Section 21084.1).

Historical resources are defined in PRC Section 21084.1 as:

“a resource listed in, or determined eligible for listing in, the California Register of Historical Resources. Historical resources included in a local register of historical resources..., or deemed significant pursuant to criteria set forth in subdivision (g) of Section 5024.1, [is] ... presumed to be historically or culturally significant for purposes of this section, unless the preponderance of the evidence demonstrates that the resource is not historically or culturally significant.”

Substantial Adverse Change. Thresholds of substantial adverse change are defined in PRC Section 5020.1 as demolition, destruction, relocation, or “alteration activities that would impair the significance of the historic resource.” Material impairment occurs when a project results in demolition, or materially alters in an adverse manner, the physical characteristics that convey a property’s historic significance, or is the reason for that property’s inclusion in an official register of historic resources (CEQA Guidelines Section 15064.5(b)(2.)).

The CEQA Guidelines define a significant impact as one that would cause “a substantial adverse change” defined as “physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired” (emphasis added CEQA Guidelines Section 15064.5(4)(b)(1)).

The significance of an historical resource is materially impaired when a project:

- a. Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register of Historical Resources; or
- b. Demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources pursuant to Section 5020.1(k) of the Public Resources Code or its identification in an historical resources survey meeting the requirements of Section 5024.1(g) of the Public Resources Code, unless the public agency reviewing the effects of the project establishes by a preponderance of the evidence that the resource is not historically or culturally significant; or

- c. Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its eligibility for inclusion in the California Register of Historical Resources as determined by a lead agency for purposes of CEQA (CEQA Guidelines Section 15064.5).

The concept of substantial adverse change includes both direct effects (or impacts) to historical resources and indirect effects to the immediate surroundings of the resource. Examples of direct impacts include:

- physical destruction of, or damage to, all or part of an historical resource
- demolition of a building that contributes to the significance of an historic district, damaging the cohesiveness and overall character of the district alteration of historical resources, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation, and provision of accessibility features that are not consistent with concepts in the Standards for Rehabilitation, applicable related guidelines or technical advisories.

Examples of indirect impacts to the immediate surroundings of a historical resource include:

- alteration of the character of physical features within the setting of the historical resource that contribute to its historic significance
- introduction of visual, atmospheric or audible elements that diminish the integrity of the character defining features of the historical resource

Alteration of an historical resource that is not found in compliance with The Secretary of Interior's Standards for Rehabilitation may also be considered an impact under CEQA.

Local

The City of Sacramento became a Certified Local Government (CLG) in 1996. The CLG program is a partnership among local governments, the California Office of Historic Preservation (OHP), and the National Park Service (NPS), which is responsible for administering the National Historic Preservation Program. It was established to encourage direct participation of local governments in the identification, evaluation, registration, and preservation of historic properties in their jurisdictions. Certified local governments make every effort to integrate local preservation interests and concerns into local planning and decision-making processes. As a CLG, the City maintains an active program to designate historic resources.

Sacramento City Code

The Sacramento City Council adopted Ordinance No. 2006-063 to add a historic preservation chapter to the Sacramento City Code on October 24, 2006. The purpose of Chapter 17.143 Historic Preservation of the City Code was:

1. To establish a City preservation program, commission and staff, to implement the Preservation Element of the City's General Plan;

2. To provide mechanisms, through surveys, nominations and other available means, to identify significant historic, prehistoric and cultural resources, structures, districts, sites, landscapes and properties within the city;
3. To provide mechanisms and procedures to protect and encourage the preservation of the city's historic and cultural resources; and
4. To provide standards, criteria and processes, consistent with State and Federal preservation standards and criteria, for the identification, protection and assistance in the preservation, maintenance and use of historic and cultural resources.

Sacramento Register. The local Sacramento Register of Historic and Cultural Resources (Sacramento Register) was established through the Historic Preservation Chapter of the City Code. The Sacramento Register records:

- Adopted landmarks
- Adopted historic districts
- Special planning districts, survey areas, and individual resources
- Pending Sacramento register nominations

To be eligible for the Sacramento Register, a resource must meet one or more of the following criteria:

1. It is associated with events that have made a significant contribution to the broad patterns of the history of the city, the region, the state or the nation;
2. It is associated with the lives of persons significant in the city's past;
3. It embodies the distinctive characteristics of a type, period, or method of construction.
4. It represents the work of an important creative individual or master.
5. It possesses high artistic values; or.
6. It has yielded, or may be likely to yield, information important in the prehistory or history of the city, the region, the state or the nation.

Additionally, resources must retain integrity of location, design, setting, materials, workmanship and association. The integrity of a resource shall be judged with reference to the particular criterion or criteria specified above.

The Sacramento Register includes special considerations for resources that may otherwise be determined ineligible for the Register. These factors include:

1. A structure removed from its original location is eligible if it is significant primarily for its architectural value or it is the most important surviving structure associated with a historic person or event.

2. A birthplace or grave is eligible if it is that of a historical figure of outstanding importance and there is no other appropriate site or structure directly associated with his or her productive life.
3. A reconstructed building is eligible if the reconstruction is historically accurate, if the structure is presented in a dignified manner as part of a restoration master plan; and if no other, original structure survives that has the same association.
4. Properties that are primarily commemorative in intent are eligible if design, age, tradition or symbolic value invest such properties with their own historical significance.
5. Properties achieving significance within the past fifty (50) years are eligible if such properties are of exceptional importance.

The Historic Preservation Chapter also identifies requirements that shall be met to list a historic district on the Sacramento Register. The City Council must hold hearing(s) to ensure that these requirements are satisfied. The requirements are as follows:

1. The area is a geographically definable area;
2. The area possesses either:
 - a. A significant concentration or continuity of buildings unified by:
 - i. past events; or
 - ii. aesthetically by plan or physical development;
 - b. The area is associated with an event, person, or period significant or important to city history;
3. The designation of the geographic area as a historic district is reasonable, appropriate and necessary to protect, promote and further the goals and purposes of this chapter and is not inconsistent with other goals and policies of the City.

Additionally these factors shall be considered:

1. A historic district should have integrity of design, setting, materials, workmanship and association,
2. The collective historic value of the buildings and structures in a historic district taken together may be greater than the historic value of each individual building or structure.

Findings

- The majority of the historic resources and landmarks in the city are located within the Central City grid. There are 31 City designated historic districts in the city. There are approximately 104 resources listed as California Points of Historical Interest, California Landmarks, and California Register Historical Resources. Fifty-seven properties in the city are listed on the National Register of Historic Places.

- The City's current Preservation Element anticipates future historic/cultural resources survey and inventory efforts on a citywide basis. The updating of existing studies, and the completion of these surveys and inventories will shape and inform planning and development decisions. A large number of additional areas are being reviewed for future consideration as historic resources/districts that could impact future development.
- There are approximately 80 known significant archaeological resource sites within the policy area. Review of proposed development projects within or in close proximity of areas designated as highly sensitive or moderately sensitive resources areas would require additional on-site review, testing, and assessment by qualified archaeologists as a part of the environmental review of the proposed project. A large portion of the city has not been surveyed for archaeological resources and was not included in the analysis of potential resources.

6.5 Mineral Resources

Introduction

This section describes the existing conditions of the mineral resources within and adjacent to the Policy Area. Information is based upon data provided by the City, data maintained by Sacramento County, and publications by the Department of Conservation, California Geological Survey (CGS, formerly Division of Mines and Geology) and Division of Oil, Gas, and Geothermal Resources (DOGGR).

Existing Conditions

Existing mineral extraction activities in and around Sacramento include fine (sand) and coarse (gravel) construction aggregates, as well as clay. Other mineral resources include gold. Construction aggregates come from two different sources: hardbed rock sources and river channel (alluvial) sources. Generally, sand, gravel, and clay are used as fill and for construction of highways and roads, streets, urban and suburban developments, canals, aqueducts, and pond linings.

The city of Sacramento had one permitted mining operation in the southeastern portion of the Policy Area; however, active mining has ceased at this location, which was owned and operated by Granite Land Company. The site has been redeveloped with an office/business park and a City park with recreation amenities. There is another mining operation (construction sand) located adjacent to the American River in the South Natomas Community Plan area. This site has not been issued a permit by the State, and the owner/operator has received several cease and desist letters from the City and State. There are 67 million tons of permitted aggregate resources in Sacramento County (California Geological Survey 2006).

One abandoned gas field is located within the boundaries of the Policy Area. A portion of the Florin Gas Field is within the city limits, but there is no active drilling, and all of the wells have been plugged and abandoned. There are no oil production areas within the Policy Area.

Mineral Resources

Historic mineral production in the region has included construction aggregate, kaolin clay, common clay, pumice, and gold. Construction aggregate consists of sand, gravel, and crushed stone. The placer gold deposits that occur in alluvial gravels in Sacramento County originated from hydrothermally emplaced gold-bearing lode quartz veins that formed during the Jurassic era in various Paleozoic and Mesozoic metamorphic and granitic rock types within the Sierran Foothills Belt (Curtis and others, 1958). Over the 150 million years since the gold was formed, the rising Sierra Nevada in combination with weathering processes eroded these lode gold-bearing rocks, and streams transported the placer gold downstream to where it was redeposited within alluvial gravels. These gold-bearing alluvial sediments gradually accumulated in the valley (Department of Conservation 1999). Mineral resources currently extracted in Sacramento County consist of primarily construction sand and gravel (USGS 2011).

According to CGS and Sacramento County records, the Sacramento Flood Control Agency has a borrow pit (fill material) in the northern part of the Policy Area, and Teichert Aggregates has sand and gravel sites within the Policy Area.

Mineral Resource Zones

The Surface Mining and Reclamation Act (SMARA) directs the State Geologist to classify (identify and map) the non-fuel mineral resources of the State to show where economically significant mineral deposits occur and where they are likely to occur based upon the best available scientific data. Areas known as Mineral Resource Zones (MRZs) are classified on the basis of geologic factors, without regard to existing land use and land ownership. The areas are categorized into four general classifications (MRZ-1 through MRZ-4). Of the four, the MRZ-2 classification is recognized in land use planning because the likelihood for occurrence of significant mineral deposits is high, and the classification may be a factor in the discovery and development of mineral deposits that would tend to be economically beneficial to society. Areas where mineral resources have been exhausted are classified and MRZ-5.

Details of the MRZ designations are as follows:

MRZ-1: Areas where available geologic information indicates there is little or no likelihood for presence of significant mineral resources.

MRZ-2a: Areas underlain by mineral deposits where geologic data indicate that significant measured or indicated resources are present. Areas classified MRZ-2a contain discovered mineral deposits as determined by such evidence as drilling records, sample analysis, surface exposure, and mine information. Land included in the MRZ-2a category is of prime importance because it contains known economic mineral deposits.

MRZ-2b: Areas underlain by mineral deposits where geologic information indicates that significant inferred resources are present. Areas classified MRZ-2b contain discovered mineral deposits that are either inferred reserves as determined by limited sample analysis, exposure, and past mining history, or are deposits that presently are sub-economic. Further exploration and/or changes in technology or economics could result in upgrading areas classified MRZ-2b to MRZ-2a.

MRZ-3a: Areas containing known mineral occurrences of undetermined mineral resource significance. Further exploration within these areas could result in the reclassification of specific localities as MRZ-2a or MRZ 2b.

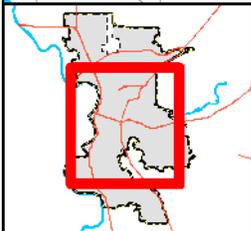
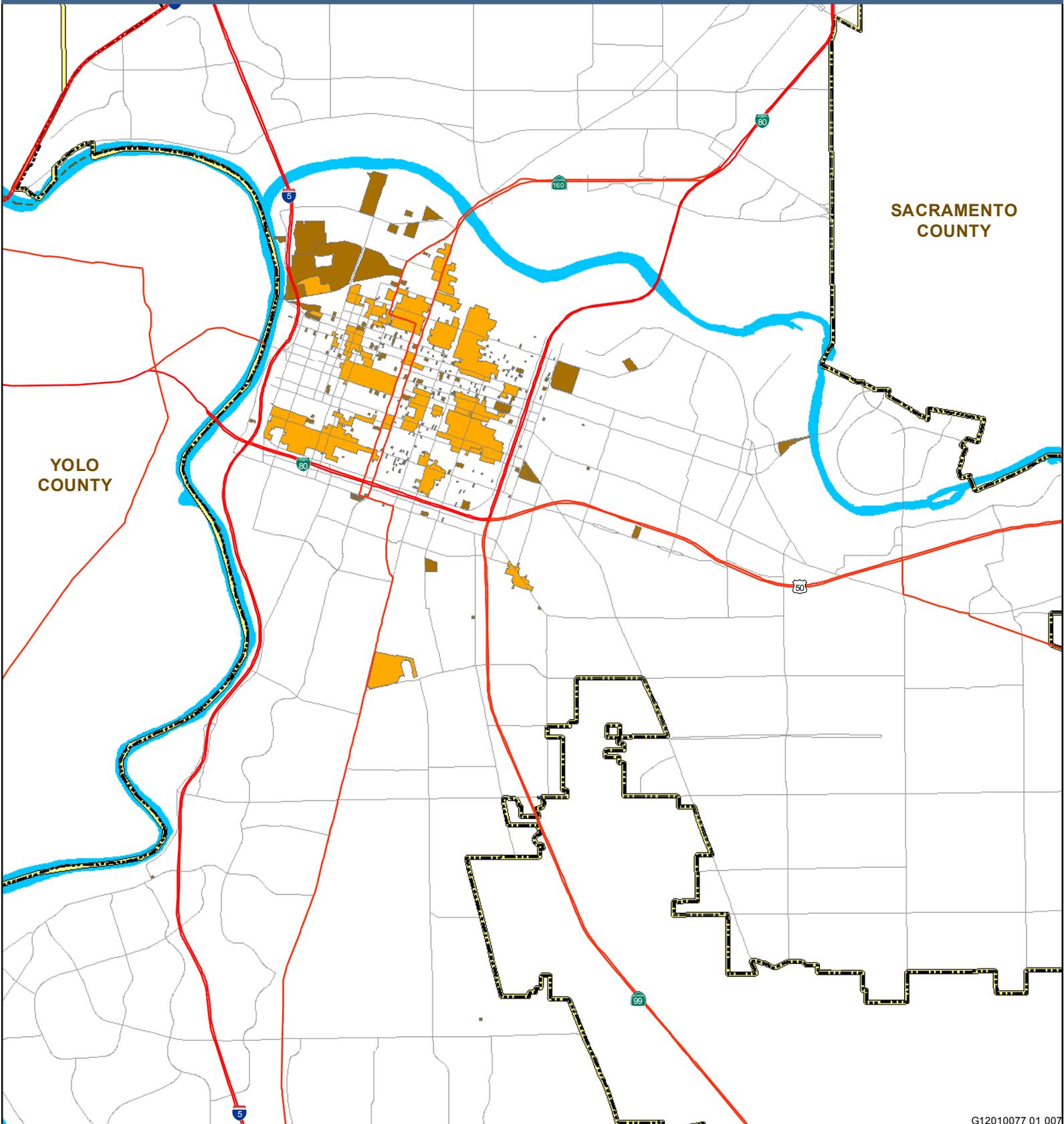
MRZ-3b: Areas containing inferred mineral occurrences of undetermined mineral resource significance. Land classified MRZ-3b represents areas in geologic settings that appear to be favorable environments for the occurrence of specific mineral deposits. Further exploration could result in the reclassification of all or part of these areas as MRZ-3a or specific localities as MRZ-2a or MRZ-2b.

MRZ-4: Areas of no known mineral occurrences where geologic information does not rule out the presence or absence of significant mineral resources.

MRZ-5: Areas mined out of portland cement concrete-grade aggregate material.

The distribution of the mineral resources in the Policy Area is shown in Figure 6-11. Areas classified MRZ-2 have been mapped by the CGS in the area between SR 99 and SR 16, in the southeastern portion of the Policy Area. The MRZ-2 area begins just east of Sacramento Executive Airport as a relatively narrow band extending northwest toward the American River.

In the vicinity of Power Inn Road, the MRZ-2 area broadens substantially towards Bradshaw Road and beyond. In general, the area classified as MRZ-2 west of the Union Pacific Railroad is urbanized, so access to any deposits would be limited. Portions of the MRZ-2 area east of the railroad are less urbanized, and most of the former and current mining operations are located in that area. The majority of the central and southeastern portions of the Policy Area are MRZ-3. The western and northern portions of the Policy Area are primarily MRZ-1. MRZ-5 is located in the MRZ-2 area south of SR 16, where there have been historical mining operations. There is no MRZ-4 in the Policy Area.



Legend

Historic Districts	Waterways
Landmark Parcels	City Limits
Major Roads	Policy Area
Highways	County Boundary

G12010077 01 007

0 0.5 1 Miles

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Oil and Gas Resources

Florin Gas Field

Florin Gas Field is located within the city of Sacramento and unincorporated Sacramento County, centered at approximately the corner of Power Inn Road and 53rd Avenue. Natural gas was extracted from the Florin Gas Field by Proctor and Gamble, Vendada National, TXO Production Corporation, and Union Oil Company. Production stopped in 1987 when the reserve was exhausted (City of Sacramento nd). Several land uses are located above the field, including residential, industrial, and commercial (including the former Army Depot), and parks (Danny Nunn Park) (CPUC 2009).

Sacramento Airport Gas Field

The Sacramento Airport Gas field covers an area of about 11 square miles centered under the Sacramento International Airport northwest of the Policy Area. Well data maintained by the California DOGGR indicate that while there are several wells in the Sacramento Airport Gas field, which generally extends from just north of Interstate 5 to the Sutter/Placer county line on north and east of the airport to the Sacramento River on the west, these wells are plugged and abandoned or are used for gas storage.

Regulatory Context

Federal

There are no Federal regulations applicable to mineral resources. Activities related to mining and mine reclamation are regulated by the State, as discussed below.

State

Surface Mining and Reclamation Act

As previously discussed, mining activities are regulated by SMARA (Public Resources Code Section 2710 et seq.). The purpose of this act is to create and maintain an effective and comprehensive surface mining and reclamation policy with regulation of surface mining operations so as to assure that: (1) adverse environmental effects are prevented or minimized and that mined lands are reclaimed to a usable condition that is readily adaptable for alternative land uses; (2) the production and conservation of minerals are encouraged, while giving consideration to values relating to recreation, wildlife, range and forage, and aesthetic enjoyment; and (3) residual hazards to the public health and safety are eliminated. These goals are achieved through land use planning by allowing a jurisdiction to balance the economic benefits of resource reclamation with the need to provide other land uses.

Section 2761 (a) and (b) and 2790 of the SMARA provides for a mineral lands inventory process termed classification-designation. The CGS and the State Mining and Geology Board (SMGB) are the State agencies responsible for administering this process. The primary objective of the process is to provide local agencies with information on the location, need, and importance of minerals within their respective jurisdictions. It is also the intent of this process, through the adoption of general plan mineral resource management policies, that this information be considered in future local land-use planning decisions (Public Resources Code Section 2762).

Public Resources Code Section 2762 directs that if a use is proposed that might threaten the potential recovery of minerals from an area that has been classified MRZ-2, the County (or City) must specify its reasons for permitting use, provide public notice of those reasons, and forward a copy of its statement of reasons to the State Geologist and SMGB.

California Code of Regulations

Mining operations and mine reclamation activities must be performed in accordance with laws and regulations adopted by the SMGB, which are contained in Section 3500 et seq. of Title 14 of the California Code of Regulations. The Office of Mine Reclamation in the State Department of Conservation oversees reclamation requirements.

Division of Oil, Gas, and Geothermal Resources

The California State Department of Conservation includes the DOGGR. The DOGGR is responsible for monitoring the drilling, operation, maintenance, and abandonment of oil, gas, and geothermal wells with the intention of environmental protection, public health and safety, and general environmental conservation methods. The DOGGR is also responsible for collecting groundwater, oil, gas, and geothermal resource data for maintaining a record of all drilled and abandoned well locations.

Local

Sacramento City Code

Chapter 17.194 (Surface Mining and Reclamation). This chapter provides effective and comprehensive surface mining and reclamation policies and regulations to properly carry out the requirements of SMARA, and other applicable regulations to ensure that: adverse environmental and other effects of surface mining operations will be prevented or minimized and that the reclamation of mined lands will provide for the beneficial, sustainable, long-term productive use of the mined and reclaimed lands; and the production and conservation of minerals will be encouraged, while eliminating hazards to public health and safety and avoiding or minimizing adverse effects on the environment.

Findings

- The State Mining and Geology Board has defined an area within Policy Area as MRZ-2, which indicates the likelihood for occurrence of significant mineral deposits is high. In general, the area classified MRZ-2 west of the Union Pacific Railroad is urbanized, so access to any deposits would be limited. Portions of the MRZ-2 area east of the railroad are less urbanized, and most of the former and current mining operations are located in that area.
- Gas fields underlie the Policy Area, but there is no active drilling/production.

6.6 Air Quality

Introduction

This section describes the existing air quality conditions within the Policy Area, the regulatory agencies responsible for managing and improving air quality, and the laws and plans that have been adopted to improve air quality. Information for this section is based on data from the Sacramento Metropolitan Air Quality Management District (SMAQMD) and the California Air Resources Board (ARB).

Existing Conditions

Regional and Local Climate

The Policy Area is located within the Sacramento Valley Air Basin (SVAB), which is a valley bounded by the North Coast Mountain Ranges to the west and the Northern Sierra Nevada Mountains to the east. The terrain in the valley is flat and approximately 25 feet above sea level.

Hot, dry summers and mild, rainy winters characterize the Mediterranean climate of the Sacramento Valley. Throughout the year, daily temperatures may range by 20 degrees Fahrenheit with summer highs often exceeding 100 degrees and winter lows occasionally below freezing. Average annual rainfall is about 20 inches and snowfall is very rare. Summertime temperatures are normally moderated by the presence of the “Delta breeze” that arrives through the Carquinez Strait in the evening hours.

The mountains surrounding the SVAB create a barrier to airflow, which can trap air pollutants in the valley. The highest frequency of air stagnation occurs in the autumn and early winter when large high-pressure cells lie over the valley. The lack of surface wind during these periods and the reduced vertical flow caused by less surface heating reduces the influx of outside air and allows air pollutants to become concentrated in a stable volume of air. The surface concentrations of pollutants are highest when these conditions are combined with temperature inversions that trap cooler air and pollutants near the ground.

The warmer months in the SVAB (May through October) are characterized by stagnant morning air or light winds, and the Delta breeze that arrives in the evening out of the southwest. Usually, the evening breeze transports a portion of airborne pollutants to the north and out of the Sacramento Valley. During about half of the day from July to September, however, a phenomenon called the “Schultz Eddy” prevents this from occurring. Instead of allowing the prevailing wind patterns to move north carrying the pollutants out of the valley, the Schultz Eddy causes the wind pattern to circle back south. This phenomenon exacerbates the pollution levels in the area and increases the likelihood of violating Federal or State standards. The Schultz Eddy normally dissipates around noon when the Delta breeze begins.

Stationary and Mobile Sources

Air pollutant emissions within the SVAB are generated by stationary, area-wide, and mobile sources. Stationary sources are usually subject to a permit to operate from the local air district, occur at specific identified locations, and are usually associated with manufacturing and industry. Examples

of major stationary sources include refineries, concrete batch plants, and can coating operations. Minor stationary sources include smaller-scale equipment such as diesel fueled emergency backup generators and natural gas boilers.

Area sources are emissions-generating activities that are distributed over an area and do not require permits to operate from any air agency. Examples of area sources include natural gas combustion for residential or commercial space and water heating, landscaping equipment such as lawn mowers, and consumer products such as barbecue lighter fluid and hairspray.

Mobile sources refer to emissions from motor vehicles, including tailpipe and evaporative emissions, and are classified as either on-road or off-road. On-road sources are those that are legally operated on roadways and highways. Off-road sources include aircraft, trains, and construction vehicles. Mobile sources account for the majority of the air pollutant emissions within the SVAB.

Ambient Air Quality Standards

Both the Federal and State governments have established ambient air quality standards for outdoor concentrations of various pollutants in order to protect public health and welfare with a margin of safety. Applicable ambient air quality standards are identified below in Table 6-8.

The air pollutants for which Federal and State standards have been promulgated include ozone, nitrogen dioxide (NO₂), carbon monoxide (CO), suspended particulate matter, sulfur dioxide (SO₂), and lead. Each of these pollutants is briefly described below.

- Ozone is a gas that is formed when reactive organic gases (ROG) and nitrogen oxides (NOX), both byproducts of internal combustion engine exhaust and other processes, undergo photochemical reactions in the presence of sunlight. Ozone concentrations are generally highest during the summer months when direct sunlight, light wind, and warm temperature conditions are favorable to the formation of this pollutant.
- NO₂ is a brownish, highly reactive gas that is present in all urban environments. The major human-made sources of NO₂ are combustion devices, such as boilers, gas turbines, and mobile and stationary reciprocating internal combustion engines.
- CO is a colorless, odorless gas produced by the incomplete combustion of fossil fuels. CO concentrations tend to be the highest during the winter morning, with little to no wind, when surface-based inversions trap the pollutant at ground levels. The highest ambient CO concentrations are generally found near congested transportation corridors and intersections, but the SVAB has not experienced a violation of ambient air quality standards for CO in 20 years (ARB 2013a).
- Respirable Particulate Matter (PM₁₀) and Fine Particulate Matter (PM_{2.5}) consist of extremely small, suspended particles 10 microns and 2.5 microns or smaller in diameter. Some sources of suspended particulate matter (e.g., pollen and windblown dust), occur naturally. However, in populated areas, most fine suspended particulate matter is caused by road dust, diesel soot, combustion products, abrasion of tires and brakes, and construction activities.

- SO₂ is a colorless, extremely irritating gas or liquid. It enters the atmosphere as a pollutant mainly as a result of the burning of high sulfur-content fuel oils and coal, and from chemical processes occurring at chemical plants and refineries.
- Lead in the atmosphere was primarily associated with combustion of leaded gasoline, which is no longer permitted for on-road motor vehicles. Lead is no longer a pollutant of concern in the SVAB.

Table 6-8 Summary of Ambient Air Quality Standards

<i>Pollutant</i>	<i>Averaging Time</i>	<i>California Standards</i>	<i>National Standards</i>
Ozone	1-hour	0.09 ppm (180 µg/m ³)	–
	8-hour	0.070 ppm (137 µg/m ³)	0.075 ppm (147 µg/m ³)
Respirable Particulate Matter (PM ₁₀)	Annual Arithmetic Mean	20 µg/m ³	–
	24-hour	50 µg/m ³	150 µg/m ³
Fine Particulate Matter (PM _{2.5})	Annual Arithmetic Mean	12 µg/m ³	15 µg/m ³
	24-hour	–	35 µg/m ³
Carbon Monoxide (CO)	1-hour	20 ppm (23 mg/m ³)	35 ppm (40 mg/m ³)
	8-hour	9 ppm (10 mg/m ³)	9 ppm (10 mg/m ³)
Nitrogen Dioxide (NO ₂)	Annual Arithmetic Mean	0.030 ppm (57 µg/m ³)	0.053 ppm (100 µg/m ³)
	1-hour	0.18 ppm (339 µg/m ³)	100 ppb (188 µg/m ³)
Sulfur Dioxide (SO ₂)	Annual Arithmetic Mean	–	0.030 ppm (80 µg/m ³)
	24-hour	0.04 ppm (105 µg/m ³)	0.14 ppm (365 µg/m ³)
	3-hour	–	0.5 ppm (1300 µg/m ³) ¹
	1-hour	0.25 ppm (655 µg/m ³)	75 ppb (196 µg/m ³)
Lead	30-day Average	1.5 µg/m ³	–
	Calendar Quarter	–	1.5 µg/m ³
	Rolling 3-Month Avg	–	0.15 µg/m ³
Sulfates	24-hour	25 µg/m ³	No National Standards
Hydrogen Sulfide	1-hour	0.03 ppm (42 µg/m ³)	
Vinyl Chloride	24-hour	0.01 ppm (26 µg/m ³)	
Visibility-Reducing Particle Matter	8-hour	Extinction coefficient of 0.23 per kilometer — visibility of 10 mi or more	

Notes: µg/m³ = micrograms per cubic meter; ppb = parts per billion; ppm = parts per million

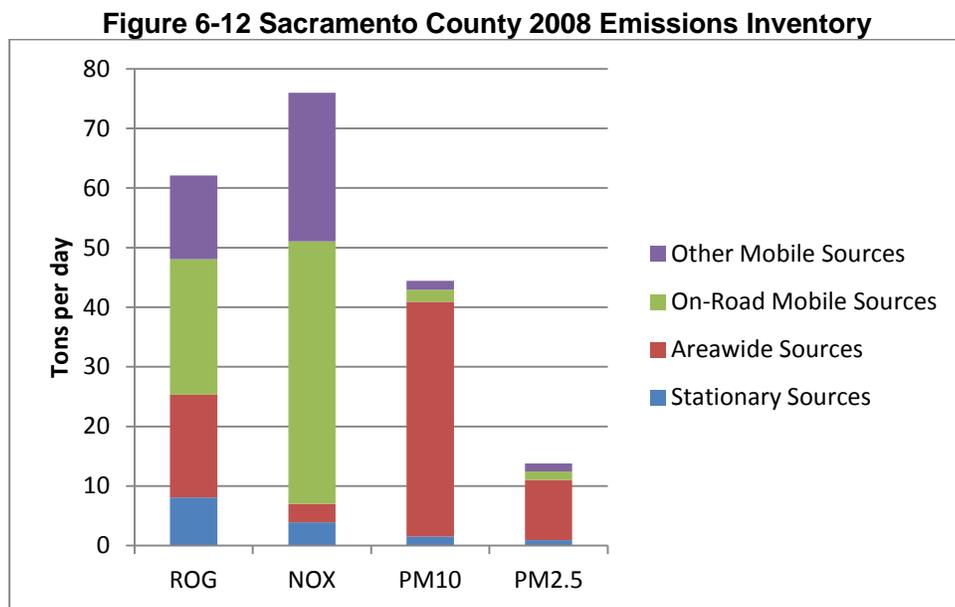
¹ Secondary Standard

Source: ARB 2012a

Regional Air Quality

Regionally, some portions of the SVAB have fewer air quality problems than others. Only a portion of the SVAB is in nonattainment for Federal ozone standards, and Sacramento County is the only county in the SVAB that has not yet been redesignated to attainment for the Federal PM10 standard. Regarding State standards, the entire SVAB is in nonattainment for ozone and PM standards.

Even though the SVAB does not attain certain standards, air quality has improved over time. Pollutant levels have decreased dramatically since the 1980s even with substantial region-wide population growth. The current emissions inventory for Sacramento County is summarized below in Figure 6-12. Mobile sources contribute the majority of ozone precursor emissions in Sacramento County, while areawide sources, such as dust entrained from vehicle travel on roadways and construction activities, compose the majority of PM emissions.



Source: ARB 2008.

Local Air Quality

The ARB collects ambient air quality data through a network of air monitoring stations throughout the state. There are seven monitoring stations in the County of Sacramento, but not all of the stations monitor for all criteria pollutants. There are two monitoring stations in the city of Sacramento. One station is located in the northern portion of Sacramento on Goldenland Court. A second is located downtown on T Street. Table 6-9 identifies the national and State ambient air quality standards for air pollutants for which Sacramento County is in nonattainment and lists the highest ambient pollutant concentrations that have been measured within the city through the period of 2009 to 2011. As shown, the Sacramento area has a recent history of Federal and State exceedances for the ozone and particulate matter standards. No other ambient air quality standards have been exceeded in Sacramento during the last three years.

Table 6-9 Summary of Ambient Air Quality Monitoring Data in Policy Area

Pollutant	Air Quality Standards	Year		
		2009	2010	2011
Ozone				
Maximum 1-hour concentration (State)	0.09 ppm	0.102	0.092	0.100
# of days exceeding State 1-hour standard.	n/a	3	0	1
Maximum 8-hour concentration. (State / national)	0.070 / 0.075 ppm	0.089	0.078	0.087
# of days exceeding State 8-hour standard.	n/a	13	2	5
# of days exceeding national 8-hour standard.	n/a	5	1	1
Respirable Particulate Matter (PM10)				
Maximum 24-hour concentration (State / national)	50 / 150 µg/m ³	50.7	53.9	67.0
# of days exceeding State standard	n/a	1	1	1
# of days exceeding national standard	n/a	0	0	0
Fine Particulate Matter (PM2.5)				
Maximum 24-hour concentration measured (State)	35 µg/m ³	50.1	37.0	50.5
# of days exceeding national standard	n/a	1	0	6

Notes: µg/m³ = micrograms per cubic meter of air; ppm = parts by volume per million of air.
Measurements are from Sacramento-Goldenland Court and T Street monitoring stations, whichever is higher.
Source: ARB 2013a.

Toxic Air Contaminant Emissions

Toxic air contaminants (TACs) are airborne substances that, even in small quantities, are capable of causing chronic (i.e., of long duration) and acute (i.e., severe, but of short duration) adverse effects on human health. They include both organic and inorganic chemical substances that may be emitted from a variety of common sources including gasoline stations, motor vehicles, dry cleaners, industrial operations, painting operations, and research and teaching facilities. TACs are different than the criteria air pollutants discussed previously in that ambient air quality standards have not been established for them. TACs are usually present in minute quantities in the ambient air; however, their high toxicity or health risk may pose a threat to public health even at low concentrations.

According to the California Almanac of Emissions and Air Quality (ARB 2009), the majority of the estimated health risks from TACs can be attributed to relatively few compounds, the most important being diesel PM. Diesel PM differs from other TACs in that it is not a single substance, but rather a complex mixture of hundreds of substances. Although diesel PM is emitted by diesel-fueled internal combustion engines, the composition of the emissions varies depending on engine type, operating conditions, fuel composition, lubricating oil, and whether an emissions control system is being used. Based on receptor modeling techniques, ARB estimated diesel PM health risk to be 360 excess cancer cases per million people in the SVAB in the year 2000. Since 1990, the health risk associated with diesel PM has been reduced by 52%. Overall, levels of most TACs, except para-dichlorobenzene and formaldehyde, have decreased since 1990 (ARB 2009).diesel engines.

Sensitive Receptors

As discussed previously, the Federal and State ambient air quality standards have been set at levels to protect the most sensitive persons from illness or discomfort with a margin of safety. Air pollution regulatory agencies typically define sensitive receptors to include residences, schools, playgrounds, child care centers, athletic facilities, hospitals, long-term health care facilities, rehabilitation centers, convalescent centers, and retirement homes. Each of these land use types is present in the Policy Area.

Land Use Planning and Air Quality

Land use patterns and density of development affect the amount of air pollutants that are generated by communities. Land uses that are segregated and lower density development dispersed throughout a community increase the number and length of motor vehicle trips and associated air pollutant emissions, because opportunities to walk, ride bicycles, and use public transit between homes, jobs, and shopping are reduced. Higher density communities that mix residential uses with commercial, business, and employment uses, can reduce the population's reliance on motor vehicle travel and the distance of any necessary vehicle trips. Increasing density can also result in the siting of sensitive receptors in closer proximity to urban sources of air pollutant emissions, such as high-volume roadways. ARB's Air Quality and Land Use Handbook: A Community Health Perspective (ARB 2005) provides guidance concerning land use compatibility with TAC emission sources. While not a law or adopted policy, the handbook offers advisory recommendations for the siting of sensitive receptors near uses associated with TACs, such as freeways and high-traffic roads, commercial distribution centers, rail yards, ports, refineries, dry cleaners, gasoline stations, and industrial facilities, to help keep children and other sensitive populations out of harm's way.

Odors

Odors are generally regarded as an annoyance rather than a health hazard. However, manifestations of a person's reaction to foul odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache). Quality and intensity are two properties present in any odor. The quality of an odor indicates the nature of the smell experience. Intensity refers to the strength of the odor, which is a function of concentration.

The ability to detect odors varies considerably among the population and overall is quite subjective. Some individuals have the ability to smell very minute quantities of specific substances; others may not have the same sensitivity but may have sensitivities to odors of other substances. In addition, people may have different reactions to the same odor; an odor that is offensive to one person may be perfectly acceptable to another (e.g., fast food restaurant). An unfamiliar odor is more easily detected and is more likely to cause complaints than a familiar one. This is because of the phenomenon known as odor fatigue, in which a person can become desensitized to almost any odor and recognition only occurs with an alteration in the intensity.

Regulatory Context

Air quality within the Policy Area is regulated through the efforts of various Federal, State, regional, and local government agencies. These agencies work jointly, as well as individually, to improve air quality through legislation, planning, policy-making, education, and a variety of other programs. The agencies responsible for improving the air quality within the air basins are discussed below.

Federal

U.S. Environmental Protection Agency

The U.S. Environmental Protection Agency (US EPA) is the Federal agency responsible for setting and enforcing the Federal ambient air quality standards for atmospheric pollutants. The US EPA regulates emission sources that are under the exclusive authority of the Federal government, such as aircraft, ships, and certain locomotives.

As part of its enforcement responsibilities, US EPA requires each state with areas that do not meet Federal air quality standards to prepare and submit a State Implementation Plan (SIP) that describes a strategy for the means to attain these standards. The SIP must integrate Federal, State, and local plan components and regulations to identify specific measures to reduce pollution, using a combination of performance standards and market-based programs.

State

California Air Resources Board

The California Air Resources Board (ARB), a part of the California Environmental Protection Agency, is responsible for the coordination and administration of both Federal and State air pollution control programs within California. In this capacity, the ARB conducts research, sets State ambient air quality standards, compiles emission inventories, develops suggested control measures, and provides oversight of local programs. The ARB establishes emissions standards for motor vehicles sold in California, consumer products (such as hairspray, aerosol paints, and barbecue lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions. The ARB also has primary responsibility for the development of California's SIP, for which it works closely with the Federal government and the local air districts.

Regional

Sacramento Area Council of Governments

The Sacramento Area Council of Governments (SACOG) is an association of local governments in the six-county Sacramento region. Its members in addition to the City and County of Sacramento include the counties of El Dorado, Placer, Sutter, Yolo, and Yuba, and 22 cities within these counties.

SACOG provides transportation planning and funding for the region, and serves as a forum for the study and resolution of regional issues. In addition to preparing the region's long-range transportation plan, SACOG approves the distribution of affordable housing in the region and assists in planning for transit, bicycle networks, clean air and airport land uses.

SACOG must also ensure that their transportation plans do not conflict with any SMAQMD air quality plans. This is known as making a "finding of conformity". Consequently, SACOG's long-range transportation plans must show that they will not create traffic increases that would cause vehicle emissions that would exceed the motor vehicle emission budget (MVEB) set by the SMAQMD in their most recent plan. If SACOG's plan does not meet the conformity criteria, a "conformity lapse" could occur where Federal funding for transportation projects is restricted.

SACOG Regional Transportation Plan/Sustainable Communities Strategy. SACOG recently completed an update to the Regional Transportation Plan is an effort to guide land use and transportation decisions over the next 20 years. This effort recognizes the linkage between growth and air quality, and also addressed greenhouse gas emissions, discussed further in Section 6.7 Greenhouse Gas and Climate Change.

Sacramento Metropolitan Air Quality Management District

Criteria Air Pollutants. The SMAQMD is the primary agency responsible for planning to meet Federal and State ambient air quality standards in Sacramento County. The SMAQMD works with other local air districts in the Sacramento region to maintain the region's portion of the SIP for ozone. The SIP is a compilation of plans and regulations that govern how the region and State will comply with the Federal Clean Air Act requirements to attain and maintain the Federal ozone standard. The most recent ozone plan adopted in the Sacramento region is the 1994 Sacramento Area Regional Ozone Attainment Plan. This Plan was produced to develop a strategy to attain the Federal one-hour ozone standard. This one-hour standard has since been replaced with an eight-hour standard. The Sacramento Region has been designated as a "severe" 8-hour ozone nonattainment area with an extended attainment deadline of June 15, 2019.

The SMAQMD also enforces air quality regulations, educates the public about air quality, and implements a number of programs to provide incentives for the replacement or retrofit of older diesel engines and to influence land use development in Sacramento County.

The SMAQMD's Sacramento Area Regional Ozone Attainment Plan also commits to obtaining one ton per year of ROG reductions and one ton per year of NOX reductions from Land Use and Transportation Control Measures. The plan lists land use mitigation and transit-oriented development as examples of the types of programs that the SMAQMD will use to reach their one ton goal. The SMAQMD does not develop specific rules to implement these programs, but instead does so mostly through the CEQA process. The SMAQMD has developed a set of guidelines (most recently revised in 2009) for use by lead agencies when preparing environmental documents. The guidelines contain thresholds of significance for criteria pollutants and TACs, and also make recommendations for conducting air quality analyses. Once the SMAQMD guidelines have been consulted and the air quality impacts of a project have been assessed, the lead agency's analysis undergoes a review by the SMAQMD. The SMAQMD submits comments and suggestions to the lead agency for incorporation into the environmental document.

Toxic Air Contaminants. As stated above, ARB's Land Use Handbook recommends that sensitive land uses be set back from major roadways in order to minimize their exposure to diesel PM. SMAQMD developed its Recommended Protocol for Evaluating the Location of Sensitive Land Uses Adjacent to Major Roadways (Roadway Protocol) to provide decision makers with a methodology to make informed land use decisions on siting new residential projects and other sensitive land uses in proximity to a freeway or major roadway. The Roadway Protocol provides screening-level guidance on situations where SMAQMD recommends a health risk assessment (HRA) be performed to evaluate risk associated with siting sensitive land uses within specified distances from major roadways in the Sacramento region (SMAQMD 2011).

Odors. Although offensive odors rarely cause any physical harm, they can be very unpleasant, leading to considerable stress among the public and often generating citizen complaints to local governments and SMAQMD. SMAQMD's Rule 402 (Nuisance) regulates odorous emissions.

Local

City of Sacramento

City of Sacramento Climate Action Plan. The City's Climate Action Plan (CAP) was adopted in February 2012 pursuant to General Plan Policy ER 6.1.7. The City's CAP, discussed further in Section 6.7 Greenhouse Gas and Climate Change, presents a set of strategies that will achieve a community-wide GHG reduction goal. Many of these strategies will have environmental co-benefits including improving air quality.

Findings

- Air quality in the city of Sacramento has steadily improved over the last two decades. However, the City and County of Sacramento still do not attain certain State and Federal air quality standards. Future population growth will make attaining these standards challenging; meteorology and topography in the Sacramento region adds to this challenge.
- Regional efforts, as well as policies adopted by the City of Sacramento, indicate that there is acknowledgement of the linkage between land use, transportation and air quality.
- Mobile sources compose the majority of ozone precursors in the plan area, while area sources compose the majority of PM emissions.
- Diesel PM, emitted by diesel engines, is considered by ARB to be the primary TAC of concern in the Plan area. High-volume roadways are a source of TACs (primarily, diesel PM) and ARB recommends sensitive land uses be set back a minimum distance of 500 feet from such roadways.

6.7 Greenhouse Gas and Climate Change

Introduction

This chapter provides a summary of applicable regulations; a discussion of existing climate conditions, climate change science, and greenhouse gas (GHG) emissions sources in California and in the city; and a description of potential effects of climate change on the city; and the potential for the city to adapt to climate change effects. GHG emissions have the potential to adversely affect the environment because they contribute to global climate change. In turn, global climate change has the potential to result in rising sea levels, which can inundate low-lying areas; to affect rain and snow fall, leading to changes in water supply and increase frequency and severity of flood events; increase the frequency and severity of extreme heat events, threatening air quality and public health; and to affect habitat, leading to adverse effects on biological and other resources.

Existing Conditions

Climate is the accumulation of daily and seasonal weather events over a long period of time, whereas weather is defined as the condition of the atmosphere at any particular time and place. The climate of the Policy Area is characterized as Mediterranean, which is strongly influenced by the Pacific

Ocean and characterized by hot, dry summers and mild, rainy winters. Throughout the year, daily temperatures may range 20 degrees Fahrenheit (°F) with summer highs often exceeding 100°F and winter lows near freezing. Average annual rainfall is about 20 inches and snowfall is very rare.

Certain gases in the earth's atmosphere, classified as GHGs, play a critical role in determining the earth's surface temperature. Solar radiation enters the earth's atmosphere from space. A portion of the radiation is absorbed by the earth's surface, and a smaller portion of this radiation is reflected back toward space. This absorbed radiation is then emitted from the earth as low-frequency infrared radiation. . Most solar radiation passes through GHGs; however, infrared radiation is absorbed by these gases. As a result, radiation that otherwise would have escaped back into space is instead "trapped," resulting in a warming of the atmosphere. This phenomenon, known as the greenhouse effect, is responsible for maintaining a habitable climate on Earth. Without the greenhouse effect, Earth would not be able to support life as we know it.

Prominent GHGs contributing to the greenhouse effect are carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O), among others. Human-caused emissions of these GHGs in excess of natural ambient concentrations are responsible for intensifying the greenhouse effect and have led to a trend of unnatural warming of the earth's climate, known as global climate change or global warming. It is extremely unlikely that global climate change of the past 50 years can be explained without the contribution from human activities (IPCC 2007).

Climate change is a global problem. GHGs are global pollutants, unlike criteria air pollutants and toxic air contaminants, which are pollutants of regional and local concern. Whereas pollutants with localized air quality effects have relatively short atmospheric lifetimes (about 1 day), GHGs have long atmospheric lifetimes (1 year to several thousand years). GHGs persist in the atmosphere for long enough time periods to be dispersed around the globe. Although the exact lifetime of any particular GHG molecule is dependent on multiple variables and cannot be pinpointed, it is understood that more CO₂ is emitted into the atmosphere than is sequestered by ocean uptake, vegetation, and other forms of sequestration. Of the total annual human-caused CO₂ emissions, approximately 54 percent is sequestered through ocean uptake, uptake by northern hemisphere forest regrowth, and other terrestrial sinks within a year, whereas the remaining 46 percent of human-caused CO₂ emissions remains stored in the atmosphere (Seinfeld and Pandis 1998).

State

Increased emissions of GHGs that contribute to global climate change are attributable in large part to human activities over the last 150 years associated with the transportation, industrial/manufacturing, utility, residential, commercial and agricultural sectors (ARB 2011a). In California, the transportation sector is the largest emitter of GHGs, followed by electricity generation (ARB 2011b). California produced 478 million gross metric tons of carbon dioxide equivalent (CO₂e) in 2008 (ARB 2011a).

Combustion of fossil fuel in the transportation sector was the single largest source of California's GHG emissions in 2008, accounting for 37 percent of total GHG emissions in the state (ARB 2011a). This sector was followed by the electric power sector (including both in-state and out-of-state sources) (24 percent) and the industrial sector (19 percent) (ARB 2011a). California GHG emissions inventory and projections are summarized in Table 6-10 below.

Table 6-10 California Greenhouse Gas Emissions Inventory and Projections

<i>Emissions Sector</i>	<i>MMT CO₂e/yr</i>				
	<i>1990</i>	<i>2000</i>	<i>2005</i>	<i>2008</i>	<i>2020</i>
Electrical Generation ¹	110.6	103.9	111.0	116.4	110.4
Residential/Commercial	44.1	42.9	40.8	43.1	45.3
Transportation	150.7	171.1	184.3	175.0	183.9
Industrial	103.0	97.3	90.7	92.7	91.5
High GWP	- ²	11.0	14.2	15.7	37.9
Agriculture	23.4	25.4	29.0	28.1	29.1
Waste Management	- ²	6.2	6.5	6.7	8.5
Forestry	0.2	0.2	0.2	0.2	0.2
Gross Total Emissions³	433	458.0	476.7	477.7	506.8
Carbon Sequestration	-6.7	-4.7	-4.2	-4.0	0.0
Net Emissions³	427	453.3	472.6	473.8	506.8

Notes: GWP = global warming potential; MMT CO₂e/yr = million metric tons carbon dioxide equivalent per year.

1 Includes in-state-generated and imported electricity production.

2 Contained within Industrial Sector emissions.

3 Totals may not sum exactly due to rounding.

Source: ARB 2007:6, 2010, 2011a.

Regional and Local

Sacramento County

The County of Sacramento completed a regional GHG emissions inventory in 2009. The results of the regional inventory are summarized below in Table 6-11.

Table 6-11 Sacramento County Greenhouse Gas Emissions Inventory

<i>Emissions Sector</i>	<i>2005 (MT CO₂e/yr)</i>	<i>Percent of Total</i>
Residential Energy	2,439,527	17.5%
Commercial and Industrial Energy	2,231,168	16.0%
Industrial Process	41,369	0.3%
On-road Transportation	6,731,929	48.3%
Off-road Vehicles and Equipment	584,090	4.2%
Solid Waste	743,232	5.3%
Wastewater Treatment	134,354	1.0%
Water Supply	63,667	0.5%
Agriculture	203,723	1.5%
High GWP GHGs	565,076	4.1%
Sacramento International Airport	200,404	1.4%
Total Sacramento County Emissions	13,938,537	100%

Notes: GHG = greenhouse gas; GWP = global warming potential; MT CO₂e/yr = metric tons carbon dioxide equivalent per year.

Source: Sacramento County 2009.

City of Sacramento

The City of Sacramento adopted a Climate Action Plan (CAP) in February 2012. The results of the GHG emissions inventory and future year projections by emission sector are summarized in Table 6-12 below. Similar to the State and County emissions profiles, transportation is the largest GHG emissions sector in the city. Transportation composes 45 percent of the city’s GHG emissions. The relative contribution of each emissions sector is summarized in Figure 6-12.

The projected annual GHG emissions in 2020, 2030 and 2050 are consistent with planned growth in population and employment assumed in the 2030 General Plan. These projections are considered “business-as-usual” estimates because they do not assume any local or statewide actions to reduce GHG emissions.

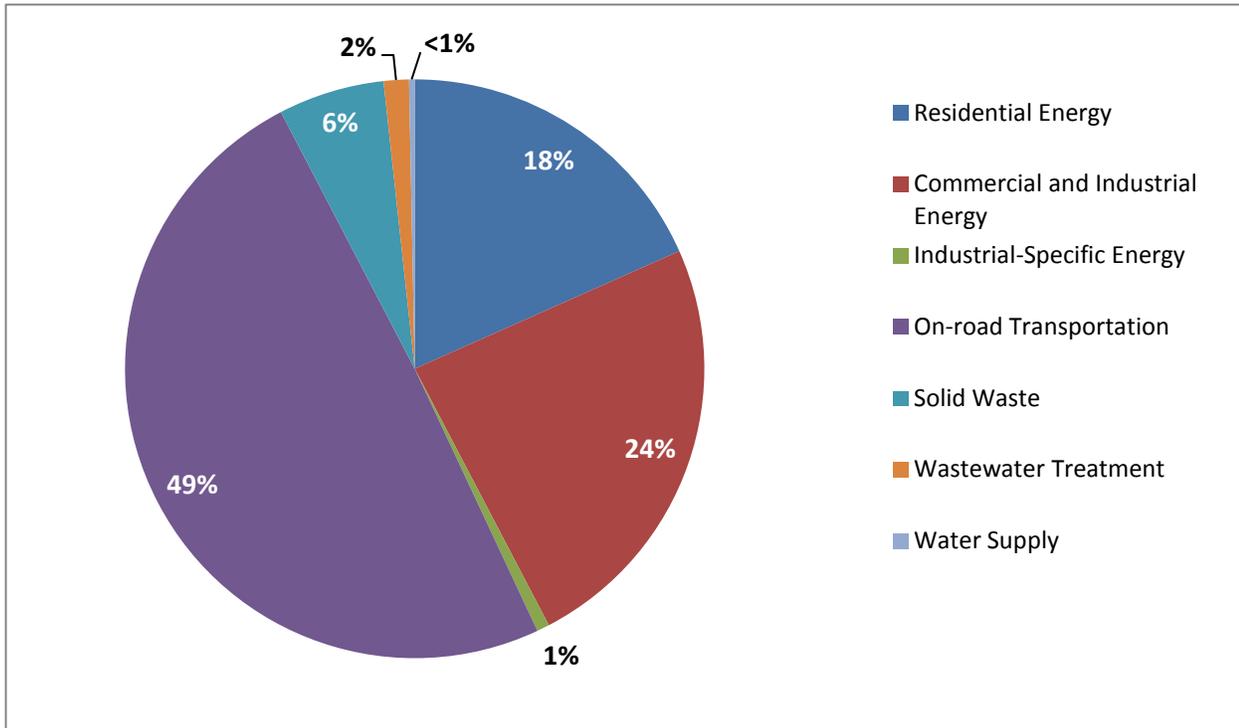
Table 6-12 City of Sacramento Greenhouse Gas Emissions Inventory and Projections				
<i>Emissions Sector</i>	<i>(MT CO₂e/yr)</i>			
	<i>2005</i>	<i>2020</i>	<i>2030</i>	<i>2050</i>
Residential Energy	748,792	993,900	1,157,307	1,484,125
Commercial and Industrial Energy ¹	979,777	1,243,593	1,419,470	1,771,224
Industrial-Specific Energy	28,656	32,789	35,544	41,054
On-road Transportation	2,013,962	2,193,916	2,313,886	2,553,825
Solid Waste	241,862	285,143	313,248	378,605
Wastewater Treatment	57,380	70,579	80,306	97,307
Water Supply	12,810	15,757	17,928	21,724
Total City of Sacramento Emissions	4,083,239	4,835,677	5,337,689	6,347,864

Notes: GHG = greenhouse gas; GWP = global warming potential; MT CO₂e/yr = metric tons carbon dioxide equivalent per year.

¹ Some utility customers may choose not to disclose their energy consumption information. In these cases where a customer elects to keep this information confidential, its consumption data is aggregated into the Commercial/Industrial Energy sector. The Industrial Specific Energy sector represents energy consumed by industrial buildings where the customer did not chose to keep its consumption information confidential.

Source: City of Sacramento 2012

Figure 6-13 City of Sacramento 2005 Greenhouse Gas Emissions Sectors



Source: City of Sacramento 2012

Climate Change Adaptation

A minimum level of climate change is expected to occur despite the City’s efforts to mitigate GHG emissions. According to Cal-Adapt, a climate change scenario planning tool developed by California Energy Commission, average temperatures in the Sacramento region are projected to rise between four and six degrees by 2100, based on low and high emissions scenarios, respectively (Cal-Adapt 2013). Cal-Adapt uses a method to downscale global climate model data to local and regional resolution under two emissions scenarios; the A-2 scenario represents a business-as-usual future emissions scenario, and the B-1 scenario represents a lower GHG emissions future.

The increase in average temperature is expected to have the following effects:

- Sea level rise.** Rising sea levels are expected due to temperature increases that cause ocean water to expand, Arctic and glacial ice to melt, and increased amounts of snowpack runoff to enter the sea. California’s ocean surface temperature patterns have been warmer than normal for the past decade, a condition known as Pacific Decadal Oscillation. California sea level appears to have risen by about seven inches over the 20th century and is predicted to rise up to 55 inches by the end of the 21st century. Sacramento’s location (70 miles inland coast) limits the most significant effects from sea level rise. However, rising sea levels may lead to levee failures in the Delta causing infrastructure damage, flooding, and saltwater intrusion into groundwater aquifers that may affect Sacramento region groundwater sources. It is also possible that sea level rise could reduce the effectiveness of Delta and nearby Delta levees, or increase flood levels in tidally affected reaches of the Sacramento

River, if storm flow and tide conditions coincide. An influx of saltwater would degrade California's inland estuaries, wetlands, and groundwater aquifers. Saltwater intrusion could threaten the quality and reliability of California's biggest fresh water supply that is pumped from the southern edge of the Sacramento/San Joaquin River Delta (City of Sacramento 2011).

- **Changes to precipitation patterns.** Precipitation levels are difficult to predict compared to other indicators of climate change. Annual rain and snowfall patterns vary widely from year to year, especially in California. Generally, higher temperatures increase evaporation and decrease snowfall, resulting in a drier climate. A majority of scientific models have shown that northern California precipitation is expected to decrease after 2030. But, more precipitation is expected to fall as rain rather than as snow. According to DWR, the Sacramento region has actually seen an increase in annual precipitation of about one inch over the last century. DWR research from 1901 to 2000 shows that the Sacramento River system runoff volume has remained stable on an annual basis, but there has been a 9 percent reduction in runoff from April through July. This is likely the result of increased winter rainfall and less snowpack storage. DWR anticipates that over the next century the Sacramento region will likely experience a slight increase in annual precipitation, with larger and more intense storms resulting in flood conditions, and longer drought periods. However, according to Cal-Adapt, the Sacramento region is projected to experience a slight decrease in annual precipitation levels (rain and snow) by 2090. It is expected that there will be less snowfall in the Sierra Nevada and the elevations at which snow falls will rise. Coincidentally, there will be less snowpack water storage to supply runoff water in the warmer months. Already it has been documented that California's snow line is rising (City of Sacramento 2011).
- **Increased frequency of extreme events such as heat waves, drought, and storm events.** Extreme heat waves are expected to increase in number by ten times in the Sacramento region and could become an annual event by 2100. Sacramento could experience up to 100 additional days per year with temperatures above 95°F and by 2090, the average July temperature could reach over 104°F. Changes to air and land temperatures will have an impact on the timing, amount, type, and location of precipitation and runoff in the Sacramento and American Rivers watersheds. This will impact the quantity of water supplies, the management of those quantities, the quality of the source water, and the demand for treated drinking water. DWR has identified anticipated changes to the source water conditions in the watershed that will likely impact the quality of the source waters, including more intense storm events, longer drought periods, reduced snowpack at lower elevations, and earlier spring runoff. Extreme weather is expected to become more common throughout California. More extreme storm events are expected to increase water runoff to streams and rivers during the winter months, heightening flood risks. (City of Sacramento 2011).

These changes to the climate and landscape of California are expected to affect the following resource areas in the Policy Area:

- **Reduced water supply and water quality:** Modeling for the Central Valley Project indicates that there are likely to be significant shortages of water in drought years in North of the Delta operations (City of Sacramento 2011).
- **Increased frequency of poor air quality days:** Higher temperatures and increased ultraviolet radiation from climate change are expected to facilitate the chemical formation of more secondary air pollutants from ground-level sources. Conversely decreased precipitation is expected to reduce the amount of particulates cleansed from the air. Incidents of wildfires in nearby foothills and mountain regions are expected to increase and further contribute to the air quality problems (City of Sacramento 2011).
- **Increased energy demand:** Increasing average temperatures and more prolonged, intense heat waves are expected to increase demand for energy (i.e., to operate air conditioners). While winter temperatures will be higher on average, the reduced use of energy for heating is not expected to compensate for the increased energy demand for cooling. Overall energy demand could increase 6 percent by 2020 and electricity demand by residential dwellings could increase by up to 55 percent by 2100. Supply of electricity may also be affected due to loss of hydroelectric power production from decreased snowpack/earlier snow melt, changes to precipitation patterns, and lower reservoir levels (City of Sacramento 2011).
- **Impacts to biological resources:** Habitats that currently support local wildlife are expected to change, forcing plants and animals to either adapt to the new environment or move to more hospitable areas. Some species will be able to adapt to changing habitats by shifting their range or altitudes in order to adjust to rising temperatures. Others, however, might not be able to adapt fast enough to keep pace with the rate of climate change. For some species, climate change may allow them to increase the range of habitat where they can live; however, where plants and animals need to move to survive they may find wildlife corridors blocked or competition from other species (City of Sacramento 2011).
- **Increased risk of flood events:** Warmer ocean surface temperatures have caused warmer and wetter conditions in the Sierra Nevada, increasing flood risk. When the Sacramento or American Rivers are already at peak capacity, additional flows from increased snowpack runoff or storm intensity could cause flooding. During the last 50 years peak flow patterns have increased in the Sacramento River, making floods more likely in the future, especially if there is an increase in intense storms (City of Sacramento 2011)

Regulatory Context

This section summarizes the current and relevant Federal, State, and local regulatory programs, plans, and policies that apply to GHG emissions and land use planning.

Federal

Supreme Court Ruling

The U.S. Environmental Protection Agency (US EPA) is the Federal agency responsible for implementing the Federal Clean Air Act (CAA). The Supreme Court of the United States ruled on April 2, 2007 that CO₂ is an air pollutant as defined under the CAA, and that US EPA has the authority to regulate emissions of GHGs.

Mandatory Greenhouse Gas Reporting Rule

On September 22, 2009, US EPA issued a final rule for mandatory reporting of GHGs from large GHG emissions sources in the United States. In general, this national reporting requirement will provide USEPA with accurate and timely GHG emissions data from facilities that emit 25,000 metric tons (MT) or more of CO₂ per year. This publicly available data will allow the reporters to track their own emissions, compare them to similar facilities, and aid in identifying cost-effective opportunities to reduce emissions in the future. Reporting is at the facility level, except that certain suppliers of fossil fuels and industrial GHGs along with vehicle and engine manufacturers will report at the corporate level. An estimated 85 percent of the total U.S. GHG emissions, from approximately 10,000 facilities, are subject to this final rule.

Greenhouse Gas Permitting Requirements on Large Industrial Facilities

On May 13, 2010, USEPA issued the Prevention of Significant Deterioration and Title V Greenhouse Gas Tailor Rule (US EPA 2013). This final rule sets thresholds for GHG emissions that define when permits under the New Source Review Prevention of Significant Deterioration (PSD) and Title V Operating Permit programs are required for new and existing industrial facilities.

Endangerment and Cause or Contribute Findings

On December 7, 2009, US EPA adopted its Proposed Endangerment and Cause or Contribute Findings for Greenhouse Gases under the CAA (Endangerment Finding). The Administrator (of US EPA) found that atmospheric concentrations of GHGs endanger the public health and welfare within the meaning of Section 202(a) of the CAA. The evidence supporting this finding consists of human activity resulting in “high atmospheric levels” of GHG emissions, which are very likely responsible for increases in average temperatures and other climatic changes. Furthermore, the observed and projected results of climate change (e.g., higher likelihood of heat waves, wild fires, droughts, sea level rise, higher-intensity storms) are a threat to the public health and welfare. Therefore, GHGs were found to endanger the public health and welfare of current and future generations. The Administrator also found that GHG emissions from new motor vehicles and motor vehicle engines are contributing to air pollution, which is endangering public health and welfare. US EPA’s final findings respond to the 2007 U.S. Supreme Court decision that GHGs fit within the CAA definition of air pollutants.

National Program to Cut Greenhouse Gas Emissions and Improve Fuel Economy for Cars and Trucks

On August 28, 2012 US EPA and the Department of Transportation’s National Highway Traffic Safety Administration (NHTSA) issued joint Final Rules for Corporate Average Fuel Economy (CAFE) standards for vehicle model years 2017 and beyond (NHTSA 2012). These first-ever national GHG emissions standards will increase fuel economy to the equivalent of 54.5 miles per gallon for cars and light-duty trucks by model year 2025. US EPA approved these standards under the CAA, and NHTSA approved them under the Energy Policy and Conservation Act.

Climate Change Adaptation

Activities are already underway across the Federal government to build adaptive capacity and increase resilience to climate change. These activities include efforts to improve understanding of climate science and impacts, to incorporate climate change considerations into policies and practices, and to strengthen technical support and capacity for adaptation decision making. Some efforts are large collaborative undertakings involving Federal and non-Federal partners while others are smaller and at the program-level. The Climate Change Adaptation Task Force, co-chaired by the White House Council on Environmental Quality (CEQ), the Office of Science and Technology Policy (OSTP), and the National Oceanic and Atmospheric Administration (NOAA), makes recommendations to President Obama for how Federal Agency policies and programs can better prepare the United States to respond to the impacts of climate change (CEQ 2013).

State

The California Air Resources Board (ARB) is the agency responsible for coordination and oversight of State and local air pollution control programs in California and for implementing the California Clean Air Act (CCAA), which was adopted in 1988. Various statewide and local initiatives to reduce the state's contribution to GHG emissions have raised awareness that, even though the various contributors to and consequences of global climate change are not yet fully understood, global climate change is under way, and there is a real potential for severe adverse environmental, social, and economic effects in the long term. Because every nation emits GHGs and therefore makes an incremental cumulative contribution to global climate change, cooperation on a global scale will be required to reduce the rate of GHG emissions to a level that can help to slow or stop the human-caused increase in average global temperatures and associated changes in climatic conditions.

Executive Order S-3-05

Executive Order S-3-05, which was signed by Governor Schwarzenegger in 2005, proclaims that California is vulnerable to the impacts of climate change. It declares that increased temperatures could reduce the Sierra Nevada snowpack, further exacerbate California's air quality problems, and potentially cause a rise in sea level. To combat those concerns, the Executive Order established total GHG emission targets. Specifically, emissions are to be reduced to the 2000 level by 2010, the 1990 level by 2020, and to 80 percent below the 1990 level by 2050. This Executive Order is binding only on State agencies, and has no force of law for local governments; however, the signing of S-3-05 sent a clear signal to the California Legislature about the framework and content for legislation to reduce GHG emissions.

Assembly Bill 32, The California Global Warming Solutions Action of 2006

In September 2006, Governor Arnold Schwarzenegger signed Assembly Bill (AB) 32, the California Global Warming Solutions Act of 2006. 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 that statewide GHG emissions be reduced to 1990 levels by 2020. This reduction will be accomplished through an enforceable statewide cap on GHG emissions that will be phased in starting in 2012. To effectively implement the cap, AB 32 directs the ARB to develop and implement regulations to reduce statewide GHG emissions from stationary sources.

Assembly Bill 32 Climate Change Scoping Plan

In December 2008, ARB adopted its Climate Change Scoping Plan, which contains the main strategies California will implement to achieve reduction of approximately 118 million metric tons (MMT) CO₂e, or approximately 22 percent from the state's projected 2020 emission level of 545 MMT of CO₂e under a business-as-usual scenario (this is a reduction of 47 MMT CO₂e, or almost 10 percent, from 2008 emissions). ARB's original 2020 projection was 596 MMT CO₂e, but this revised 2020 projection takes into account the economic downturn that occurred in 2008 (ARB 2011b). The Scoping Plan reapproved by ARB in August 2011 includes the Final Supplement to the Scoping Plan Functional Equivalent Document (FED), which further examined various alternatives to Scoping Plan measures. The Scoping Plan also includes ARB-recommended GHG reductions for each emissions sector of the state's GHG inventory. ARB estimates the largest reductions in GHG emissions to be achieved by implementing the following measures and standards (ARB 2011b):

- improved emissions standards for light-duty vehicles (26.1 MMT CO₂e),
- the Low-Carbon Fuel Standard (LCFS) (15.0 MMT CO₂e),
- energy efficiency measures in buildings and appliances (11.9 MMT CO₂e), and
- a renewable portfolio and electricity standards for electricity production (23.4 MMT CO₂e).

In 2011, ARB adopted the cap-and-trade regulation. The cap-and-trade program covers major sources of GHG emissions in the state such as refineries, power plants, industrial facilities, and transportation fuels. The cap-and-trade program includes an enforceable emissions cap that will decline over time. The State distributes allowances, which are tradable permits, equal to the emissions allowed under the cap. Sources under the cap are required to surrender allowances and offsets equal to their emissions at the end of each compliance period. With regard to land use planning, the Scoping Plan expects that reductions of approximately 3.0 MMT CO₂e will be achieved through implementation of Senate Bill (SB) 375, which is discussed further below (ARB 2011b).

Senate Bill 375

SB 375, signed in September 2008, aligns regional transportation planning efforts, regional GHG emission reduction targets, and land use and housing allocation. SB 375 requires Metropolitan Planning Organizations (MPOs) to adopt a Sustainable Communities Strategy (SCS) or Alternative Planning Strategy (APS), which will prescribe land use allocation in that MPO's Regional Transportation Plan (RTP). The Sacramento Area Council of Governments (SACOG) is responsible for developing and SCS that includes the City of Sacramento and the Study Area. ARB, in consultation with MPOs, provided each affected region with reduction targets for GHGs emitted by passenger cars and light trucks in the region for the years 2020 and 2035. SACOG's GHG reduction targets are 7 percent below 2005 per-capita GHG emissions levels by 2020 and 16 percent by 2035 (ARB 2012). SACOG adopted its RTP/SCS in 2012 and demonstrated that it would meet its SB 375 targets.

Senate Bill 97

As directed by SB 97, the California Natural Resources Agency adopted Amendments to the CEQA Guidelines for GHG emissions on December 30, 2009. On February 16, 2010, the Office of Administrative Law approved the Amendments, and filed them with the Secretary of State for inclusion in the California Code of Regulations. The Amendments became effective on March 18, 2010.

CEQA allows lead agencies to analyze and mitigate the significant effects of GHG emissions at a programmatic level, such as in a general plan, or as part of a separate plan to reduce GHG emissions (e.g., a climate action plan) to reduce GHG emissions (CEQA Guidelines Section 15183.5).

SB 1078 Renewable Electricity Standard

SB 1078 (Chapter 516, Statutes of 2002) requires retail sellers of electricity, including investor-owned utilities and community choice aggregators, to provide at least 20 percent of their supply from renewable sources by 2017. SB 107 (Chapter 464, Statutes of 2006) changed the target date to 2010. In November 2008 Governor Schwarzenegger signed Executive Order S-14-08, which expands the State's Renewable Electricity Standard to 33 percent renewable power by 2020.

Executive Order S-1-07, Low-Carbon Fuel Standard

Executive Order S-1-07, which was signed by Governor Schwarzenegger in 2007, proclaims that the transportation sector is the main source of GHG emissions in California, at over 40 percent of statewide emissions. It establishes a goal that the carbon intensity of transportation fuels sold in California should be reduced by a minimum of 10 percent by 2020. This order also directed ARB to determine if this Low Carbon Fuel Standard (LCFS) could be adopted as a discrete early action measure after meeting the mandates in AB 32. ARB adopted the LCFS on April 23, 2009.

Advanced Clean Cars Program

In January 2012, ARB approved a new emissions-control program for model years 2017 through 2025 of passenger vehicles and light-duty trucks that addresses emissions from passenger vehicles and light-duty trucks. In addition to establishing more stringent emission standards for both GHGs and criteria air pollutants (and precursors), the program increases requirements of manufacturers to produce more Zero Emission Vehicles, including battery electric vehicles, hydrogen fuel cell vehicles, and plug-in hybrid electric vehicles. The program also includes a Clean Fuels Outlet regulation that helps make sure that fuels such as electricity and hydrogen are available to meet the fueling needs of the new advanced technology vehicles as they come to market. More specifically, it requires major refiners/importers of gasoline to develop hydrogen fueling stations to meet demand for hydrogen fuel (ARB 2013).

California Building Codes, Title 24

Title 24 of the California Code of Regulations (CCR) regulates how each new home and business is built or altered in California. It includes requirements for the structural, plumbing, electrical, and mechanical systems of buildings, and for fire and life safety, energy conservation, green design, and accessibility in and about buildings. CCR Title 24 are statewide codes and standards that must be enforced by local agencies through the construction application process.

The California Green Building Standards Code, or CalGreen, became a mandatory code beginning January 1, 2011. The code takes a holistic approach to green building by including minimum requirements in the areas of planning and design, energy efficiency, water efficiency and

conservation, material conservation and resource efficiency, and environmental quality. The CalGreen code has minimum mandatory standards and two additional tiers of voluntary measures intended to achieve greater levels of efficiency that result in lower levels of GHG emissions. Local governments must enforce the minimum standards and can choose to adopt either Tier 1 or Tier 2 standards to achieve greater positive environmental impacts. The City's CAP requires that new buildings meet Tier 1 standards beginning in 2014 and includes some requirements and incentives for existing buildings to meet Tier 1 standards when undergoing renovation.

California Climate Adaptation Strategy

In 2009, California adopted a statewide Climate Adaptation Strategy (CAS) that summarizes climate change impacts and recommends adaptation strategies across seven sectors: public health; biodiversity and habitat; oceans and coastal resources; water; agriculture; forestry; and transportation and energy. The 2009 CAS was the first of its kind in the usage of downscaled climate models to more accurately assess statewide climate impacts as a basis for providing guidance for establishing actions that prepare, prevent, and respond to the effects of climate change (CNRA 2009). The CNRA, in coordination with the California Emergency Management Agency, prepared the California Adaptation Planning Guide in 2012, which includes planning guidance and support for communities vulnerable to climate change (CNRA 2012).

Regional

Sacramento Area Council of Governments

As discussed above under SB 375, SACOG recently completed an update to the RTP/SCS, which will guide land use and transportation decisions over the next 20 years. The SCS demonstrates a plan to achieve ARB-issued mobile-source per-capita GHG reduction targets of 7 percent below 2005 levels by 2020 and 16 percent by 2035 for automobiles and light-duty trucks.

Sacramento Metropolitan Air Quality Management District

SMAQMD adopted its CEQA Air Quality Handbook in 2009 that includes guidance for evaluation of GHG emissions attributable to projects. Projects that will be developed in the city pursuant to the General Plan Update may be subject to these guidelines. SMAQMD encourages local governments to adopt a qualified GHG reduction plan that is consistent with AB 32 goals, such as the City's CAP. If a project is consistent with an adopted qualified GHG reduction plan, it can be presumed that the project will not have significant GHG emission impacts. This approach is consistent with the State CEQA Guidelines, Section 15183.5.

As described above in the Federal regulatory setting, facilities with the potential to emit GHGs above a certain level would be required to comply with enforceable limits on GHG emissions in order to obtain an applicable Federal Operating Permit and meet New Source Review PSD requirements under the Clean Air Act.

Local

City of Sacramento

Sacramento Climate Action Plan. Adopted in February 2012, the City's CAP identifies strategies to guide the development and implementation of locally-focused GHG reduction measures and quantifies the associated emissions reductions. The CAP also identifies actions and policies the City has already implemented as part of its existing general plan that result in GHG efficiency or GHG

emission reductions. In addition, it includes adaptation measures to improve the City's ability to address the potential impacts that climate change may have on the city and its residents. The CAP identifies a GHG reduction target of 15 percent below base year (2005) GHG emissions by year 2020. This target can also be expressed as a 28 percent reduction below projected 2020 "business as usual" GHG emission levels, which takes into account emission reductions in both existing and new development assumed in the 2030 General Plan. The CAP fulfilled the criteria identified in the above implementation measure, and during this general plan update, will be integrated into the General Plan. During the CAP integration process, refinement of individual policies and strategies may occur. For a complete list of Climate Change Adaptation-related supporting actions, see Chapter 4, Strategy 6 of the CAP (City of Sacramento 2012:4-69).

Findings

- The major source of GHG emissions in the City is transportation, followed by energy consumption in buildings. These sources constitute the majority of GHG emissions from community-wide activities.
- Without the City's CAP (i.e., under a "business-as-usual" scenario), community-wide GHG emissions are anticipated to increase by about 18 percent by 2020, and by about 31 percent by 2030 associated with growth anticipated under the existing general plan.
- The City adopted a GHG reduction target of 15 percent below 2005 baseline emission levels by year 2020. The City's CAP identifies GHG reduction strategies that would achieve this target through emission reductions in the following sectors: Energy, Transportation, Water Consumption, Wastewater Treatment, and Solid Waste.
- State regulations related to Advanced Clean Cars, Renewable Portfolio Standards, California Green Building Code Standards, and the Sustainable Communities Strategy will also result in GHG emission reductions in both existing and future development.
- The City's population, resources, and economy are vulnerable to climate change impacts, particularly flooding, extreme heat, and water supply. The CAP includes strategies to address climate change adaptation.

6.8 Scenic Resources

Introduction

This section describes the existing scenic character of the Policy Area. Scenic resources include a variety of natural and built elements that serve as visual landmarks defining the important scenic qualities of the community. This section is based on field surveys and reviews of the City of Sacramento's Design Review Guidelines, as well as State and Federal scenic resources legislation.

Overview of Scenic Resources

Scenic resources are an important component of the quality of life of any geographic area. As users experience a place, their primary sensory interaction with that place is visual in nature. A wide variety of shapes, colors, and textures form the important scenic qualities of the city of Sacramento, including structures, roadways and waterways, and vegetation.

Most communities identify scenic resources as an important asset, although what is considered "scenic" may vary according to environmental setting. Scenic resources can include natural open spaces, topographic formations, and landscapes (such as oak woodlands, lakes, rivers, and streams). These are resources that can be maintained and enhanced to promote a positive image over time. Scenic resources can also include urban open spaces and the built environment, including historical areas. "Viewsheds" constitute the range of vision in which scenic resources may be observed. They are defined by physical features that frame the boundaries or context to one or more scenic resources. "Aesthetic value" refers to the perception of the natural beauty of an area, as well as the elements that create or enhance its visual quality. While aesthetic value is subjective, it is typically included as a criterion for evaluating those elements that contribute to the quality that distinguishes an area.

A sensitive receptor is an individual that is especially sensitive to changes in aesthetic qualities (including changes in lighting, shadows, or surrounding visual character). Uses that accommodate sensitive receptors in the Policy Area include residential, recreational, and park uses. In general, users of public areas such as parks and trails are considered sensitive receptors to visual resources. There are over 200 parks, and over almost 90 miles of walking/jogging trails, and bicycle trails located throughout the Policy Area.

Light and Glare

Light levels are measured in foot candles (1 lumen of light per square foot). Table 6-13 lists typical ambient illumination levels for exterior and interior lighting. Street light can be as much as 80 times as bright as ambient moonlight. Light that falls beyond the intended area is referred to as light trespass. Types of light trespass include spill light and glare. Nighttime lighting is necessary to provide and maintain safe, secure, and attractive environments; however, these lights have the potential to produce spill light and glare, waste energy, and if designed incorrectly, could be considered unattractive. Spill light can adversely affect light sensitive uses, such as residential neighborhoods at nighttime, and dissipates with increased distance from the source.

Table 6-13 Typical Illumination Levels in Foot-Candles

<i>Light Source</i>	<i>Foot-Candles</i>
Starlight	0.0001
Moonlight (Full Moon)	0.01
Direct Sunlight	10,000
Overcast Daylight	100
Office Lighting	500

Source: The Engineering Toolbox nd

Glare results when a light source directly in the field of vision is brighter than the eye can comfortably accept. Squinting or turning away from a light source is an indication of glare. The presence of a bright light in an otherwise dark setting may be distracting or annoying, referred to as discomfort glare, or it may diminish the ability to see other objects in the darkened environment, referred to as disability glare.

The city of Sacramento is primarily built-out, and a significant amount of artificial light and glare from urban uses already exists. The downtown area has a higher concentration of artificial light and reflective surfaces that produce glare than the outlying residential areas.

Existing Conditions

The Policy Area is a valley floor characterized by flat terrain in a predominately built-out environment. Long-range views are generally expansive, when not impeded by existing mature trees and buildings. Views onto and across the city to the east include views of the foothills and mountains. The Sierra Nevada mountain range can be seen directly behind the city skyline driving east across the Sacramento-Yolo Causeway on Interstate 80 (I-80) when the sky is clear. The confluence of two major rivers, the Sacramento and American Rivers, also contributes strongly to the scenic qualities of the city.

Natural Elements

Known as the City of Trees, Sacramento is distinguished by an abundance of trees in almost every area. From the elevated freeways that bisect the downtown area to vistas from the eastern foothills, long distance views onto the Policy Area are filled with trees and developed areas.

Sacramento is located at the confluence of the Sacramento and American rivers, both of which are some of the primary natural scenic resources of the Policy Area. The Sacramento River is situated in a north/south direction, and serves as the western boundary for much of the city. The American River flows eastward through the Policy Area and meets the Sacramento River near the city's western boundary. The American River Parkway, an open space greenbelt, extends 29 miles from the confluence of the Sacramento River to Folsom Dam. The two rivers provide recreational opportunities, create a permanent physical break in the pattern of urban development, and provide visual contrast to the Policy Area.

The American River is designated as a recreational river under the Wild and Scenic Rivers Act from the confluence with the Sacramento River to Nimbus Dam, located just east of the city. This prohibits Federal construction, assistance, or licensing of water projects "adversely affecting the characteristics qualifying the river for the national system." This designation recognizes the importance of recreational opportunities and preservation of the river's natural qualities (Sacramento County 2008).

Open Space

Open space provides visual relief from urbanized areas, including views for residents, motorists, and pedestrians. Since a majority of Sacramento is currently developed or planned for development, open space within the Policy Area is provided in the form of conserved lands, parks, agricultural land, and vacant lands. See Section 5.3 “Parks and Recreation” for a detailed discussion of parkland and open space located within the city.

Built Elements

Built elements, such as culturally important or historic buildings, may possess important scenic qualities.

Buildings and Structures

The city of Sacramento’s downtown is distinguished by high-rise towers in excess of 40 stories. The downtown skyline is visible from miles around the city, including from eastbound I-80 on the Sacramento-Yolo Causeway, from westbound I-80 above the city of Roseville, from northbound I-5 between Elk Grove and Sacramento, from westbound Highway 50, and from southbound I-5 and SR 99 north of the downtown area. Distinctive features of the skyline include the Wells Fargo Center, the California Environmental Protection Agency building, the U.S. Federal Courthouse, and, by night, the blue light of the Esquire Plaza. The towers of a central district provide important scenic cues regarding the quality of the downtown character of the city. Besides the towers, other noteworthy buildings in downtown Sacramento also include the California State Capitol and Sutter’s Fort located in downtown and midtown Sacramento, respectively.

Historic resources make up an important component of the built environment and are located mostly within the Central City. These resources are described in more detail in Section 6.4 Cultural Resources.

State Capitol. The State Capitol is a key scenic landmark within the city, because of its cultural and governmental importance. Construction on the State Capitol began in 1860, just 12 years after the discovery of gold at Sutter’s Mill on a four-square block site that had been occupied by several private homes. Construction was completed in 1874. The first major alteration took place from 1906 through 1908. A fourth floor was added to the building by gutting the chambers, taking the roof off the building, installing new steel trusses, and redesigning the senate and assembly chambers. The building remained much that way until the 1930s, when a mezzanine floor was added. The East Wing of the Capitol Building was added around 1952.

Extending west from the Capitol Building is the Capitol Mall, a wide and open boulevard between the Sacramento River and the Capitol. The Capitol Mall offers a unique view of the State Capitol building by providing an uninterrupted view from the Tower Bridge. Capitol Mall is listed as one of the “Protected Views and Vistas” listed in the Sacramento Urban Design Plan. The view is characterized by the mostly tree-lined roadway, which includes two lanes each of west- and east-bound traffic, divided in the middle with a broad, turf-covered median strip.

Sutter’s Fort. Another well-known scenic landmark and historic resource within Sacramento is the Sutter’s Fort State Historic Park, which is bound by K, L, 26th, and 28th streets. Sutter’s Fort, also on the National Historic Register, consists of the original central two-story adobe building, as well as reproductions of the surrounding structures such as stores, a print shop, and a blacksmith shop.

Many other historic resources exist within the city. These resources are described in more detail in Section 6.4 Cultural Resources of this document.

Landmarks

The term landmark here is used to refer to something that is easily recognizable (e.g., monument, building, other structure). Through their scale and/or distinctive design, landmarks become reference points within the city that provide structure and orientation, and contribute to the design character to the surrounding area. Within the Policy Area, such landmarks include the State Capitol and Sutter's Fort (described above), as well as the Tower Bridge, Sacramento Memorial Auditorium, the Elks Building, the Sacramento Valley Station (AMTRAK Depot), Cesar Chavez Plaza Park, Sleep Train Arena, the water tower west of I-5 near the Town of Freeport, Cal-Expo, and Executive Airport.

Historic Districts

Historic districts include those in the downtown such as the Old Sacramento Historic District and Merchants Row Historic District, and residential historic districts such as the Boulevard Park Historic District and the Industrial R Street Historic District. These elements add texture and character to the Policy Area (City of Sacramento 2009).

Parks

The American River Parkway is a nationally renowned urban river park. Managed by the County of Sacramento, the parkway includes several regional parks and a broad riparian forest and reinforces the scenic quality of the city and its tree-dominant landscape. Parks in or adjacent to the Parkway include Discovery Park, the Woodlake area, Cal Expo area, Paradise Beach, and the Howe Avenue area (Sacramento County 2008). It provides a protected natural landscape within the heart of the urban community. The parkway also provides important visual access for city residents who come into the river corridor along its bicycle trails or within its parklands.

In addition to buildings and structures, parks can also serve as landmarks within the city. Capitol Mall plays a critical role in organizing the entry experience to the downtown and the State Capitol. Similarly, formal parks such as Cesar Chavez Park, Capitol Park, Land Park, Curtis Park, and McKinley Park all are distinctive landmarks that contribute to the identity and formal structure of the neighborhoods in which they are located.

Views and Vistas

The Policy Area includes large portions of developed areas, ranging from single-family residential homes to high-rise office buildings in the downtown area. The areas where homes dominate the viewshed are generally areas with more green space, less artificial light (and, therefore, darker nighttime views), and less glare due to the limited amount of reflective materials.

Views of Central City

The average elevation in the Central City is approximately 25 feet above sea level. The flatness of the landscape creates a striking visual contrast with the urban silhouette of downtown high-rises. This is particularly true of the view of the downtown skyline as one approaches from the west and north (City of Sacramento 2009).

Views of the Central City offer a mix of building types and sizes, interspersed with parks, trees, and municipal uses. Building designs range from historic architecture to modern structures. The Central City/Midtown area includes distinctive housing styles from several different architectural eras, including the Victorian Delta Style (1880s through 1890s), Queen Anne Style (1880s through 1890s), Craftsman Bungalow Style (1900 through 1920s), and Mediterranean/Spanish Eclectic Style (1920s through 1930s). Views of the Central City include the State Capitol Building, Old Sacramento, Tower Bridge, the Sacramento River, the Downtown Railyards, and I-5. The Central City contains many skyscrapers, the exteriors of which are dominated by glass and can produce glare. The downtown area is also significantly brighter than the outlying residential areas due to the amount of artificial light associated with building, roadways, and parking areas.

Views of South Sacramento

Views of the South Sacramento area are characterized by single-family neighborhoods and low-scale shopping areas. The areas where homes dominate the viewshed are generally areas with more green space, less artificial light, and less glare due to the limited amount of reflective materials. The commercial uses in South Sacramento tend to be concentrated in community shopping centers and along commercial strips such as Florin Road, Franklin Boulevard, Mack Road, Freeport Boulevard, Fruitridge Road, and Stockton Boulevard. The few office uses in South Sacramento are located primarily in the vicinity of Florin Road, Power Inn Road, and around the Methodist Hospital off of SR 99. The commercial uses are primarily located in strip malls, which are primarily single-story structures dominated by signage with surface parking lots adjacent to the front of the buildings.

Executive Airport is visible along Freeport Boulevard. Small planes, metal airplane hangars, and surface parking lots are visible from the roadway. The main entrance is landscaped with trees, planters and low shrubs, beyond which a surface parking lot and the various buildings are visible. The majority of the buildings, including the hangers, are warehouse-like buildings with metal siding. The airstrips are paved and there is artificial lighting throughout the night providing sky glow over the airport. Other key views in the southern Sacramento are of Laguna Creek and the Sacramento Regional Community Service District bufferlands.

Views of North Sacramento

The northern portion of Sacramento includes the Natomas area and North Sacramento. The North Natomas area contains some of the largest portions of undeveloped agricultural land in the area, but has also been developed with residential neighborhoods interspersed with retail centers. Development in the Natomas area has largely occurred in the last 20 years and, as such, is somewhat uniform in character. The residential subdivisions consist primarily of modern two-story homes that maximize lot coverage and minimize landscaping. Six to 10-foot high concrete walls or wood fences are visible from the main roadways, and many areas are gated. Within the residential neighborhoods, most main roadways are six to eight lanes wide with street lights.

The retail centers generally consist of large concrete buildings located either adjacent to the street frontage or set back with large, sparsely landscaped surface parking areas. These retail centers also generally have a significant amount of artificial lighting both in the parking lots and on the storefronts and signs. Many of the storefronts consist primarily of glass that can be a source of glare.

Views of East Sacramento

The eastern portion of the Policy Area is characterized by residential and commercial uses. Many of the neighborhoods in this area were established decades ago and, as such, are dominated by mature trees that provide a wide tree canopy over streets lined with single and two-story homes ranging from small bungalows to more modern structures. This area also includes open space, parks, and waterways, including the Cal Expo Parkway.

Scenic Highways

California's Scenic Highway Program was created in 1963. The scenic highway designation serves to protect and enhance California's natural scenic beauty and to protect the social and economic values provided by the State's scenic resources. Adjacent to the Policy Area, State Route (SR) 160 is designated as a Scenic Highway from the Contra Costa County line to the southern city limit of Sacramento, for a length of 35 miles. Known as River Road, the highway meanders through the historic Delta agricultural area and small towns along the Sacramento River. River Road becomes Freeport Boulevard as it enters the city limits.

Gateways to Downtown

Historical gateways into the city of Sacramento have been largely obscured by the vast network of freeways that now dominate the landscape. The most symbolic entry into the city is from the west across the Tower Bridge. From the approach, the formal elegance of the Capitol Mall parkway and the Capitol building are visible. This is in contrast to the more often used, utilitarian off-ramps from Interstate 5 at J Street for downtown, at Q Street for the Capitol, and at Richards Boulevard for the River District, and from the Highway 50 off-ramps at 5th and 16th streets. The sole northern gateway along SR 160/12th Street is more intentional in its layout as an entry than the freeway off-ramps and has the benefit of the American River as a gateway element. The entry experience is compromised, however, by the industrial area and the railroad underpass near the northern boundary of the city.

Regulatory Context

Federal

Wild and Scenic Rivers Act

The Wild and Scenic Rivers Act (16 USC 1271-1287) established a method for providing Federal protection for certain free-flowing rivers, preserving them and their immediate environments for the use and enjoyment of present and future generations. Eligible rivers can be designated as Wild River Areas, Scenic River Areas, or Recreational River Areas. As stated above, the American River from the Nimbus Dam to the confluence of the Sacramento River is designated as a Recreational River Area. Recreational River Areas are "[t]hose rivers or sections of rivers that are readily accessible by road or railroad, that may have some development along their shorelines, and that may have undergone some impoundment or diversion in the past."

The Wild and Scenic Rivers Act, under Section 10, includes management direction for designated rivers, stating that "...primary emphasis shall be given to protecting its aesthetic, scenic, historic, archaeological, and scientific features."

State

California Scenic Highway Program

In 1963, the State legislature established the California Scenic Highway Program through Senate Bill 1467. This Senate Bill added Section 260 et seq. to the Streets and Highway Code. In these statutes, the State proclaims its intent to: "...establish the State's responsibility for the protection and enhancement of California's natural scenic beauty" (Caltrans 2008).

A Scenic Corridor is defined as the area of land generally adjacent to, and visible from, the highway. It is usually limited by topography and/or jurisdictional boundaries. Local jurisdictions, with support of their citizens, must adopt programs to protect the scenic qualities of qualifying corridors, and zoning and land use along the highway must meet the State's minimum requirements for scenic highway corridor protection. Actions required by Section 261 of the code include:

- Regulation of land use and density of development,
- Detailed land and site planning,
- Control of outdoor advertising,
- Careful attention to, and control of, earthmoving and landscaping, and
- Regulation of the design and appearance of structures and equipment (i.e., placement of utility structures, microwave receptors, etc.).

Capitol View Protection Act: Government Code Section 8162.5 through 8162.9

These Government Code Sections apply to the State Capitol and Capitol Park and are intended to guide future development in a way that would preserve and enhance the visual prominence of the State Capitol and the character and scale of Capitol Park. The Code Sections establish height limits and setback requirements in the blocks surrounding the Capitol and Capitol Park. Section 17.96.100 of the City of Sacramento Zoning Code (discussed below) reflects the text of the Capitol View Protection Act.

Local

Design Review Districts

The city of Sacramento includes the following 14 Design Review Districts (DRD):

- Alhambra Corridor Special Planning District (SPD),
- Broadway/Stockton SPD,
- Campus Commons DRD,
- Central Business District,
- Central City DRD,
- Del Paso Heights DRD,

- Expanded North Area DRD,
- North Sacramento DRD,
- Northgate Boulevard SPD and Expanded DRD,
- Oak Park DRD,
- R Street Corridor SPD,
- Railyards SPD,
- Richards Boulevard SPD, and
- Strawberry Manor DRD.

The Design Director and design review staff are responsible for reviewing and taking action on design review applications. Per the Design Review Code (Sacramento City Code Chapter 17.132) development applications are reviewed to ensure that:

- The desirability of adjacent and surrounding properties is enhanced;
- The benefits of occupancy of adjacent and surrounding properties are improved;
- The value of surrounding properties is increased;
- Appropriate development of adjacent and surrounding properties is encouraged; and
- The maintenance and improvement of surrounding properties is encouraged, resulting in the enhancement of the health, safety, aesthetics, and general welfare of the inhabitants of the area and the inhabitants of the city at large.

Central City Urban Design Guidelines

The Central City Neighborhood Design Guidelines are part of the City's Design Review Program and are intended to provide design guidance for projects in a way that respects and enhances existing neighborhoods and ensure that building design is compatible with its surroundings. The guidelines include core design guidelines, as well as guidelines specific to Central City neighborhoods, the Railyards, and the River District.

The Central City Urban Design Guidelines are a compilation of guidelines that can be independently updated to accommodate future conditions. The guidelines articulate an urban design vision for Central City neighborhoods and corridors to be used by neighborhood residents, City staff, the Design Review and Preservation Board, and the City Planning Commission in the review of proposals for new development, building additions, alterations and public improvements within the Central City Design Review District (bounded by the Sacramento River, the UP mainline, Alhambra Boulevard, and Broadway). These include recommendations related to: building height, maintaining gateways, urban forest management, maintaining distinctive neighborhoods and districts, designing a well-defined public realm.

Alhambra Corridor Design Guidelines

The Alhambra Corridor Design Guidelines were developed by the City to address the form and function of the Alhambra Corridor as a whole, as well as of each neighborhood. The guidelines were intended to ensure the proper relationship and connection with surrounding development between neighborhoods in the corridor, East Sacramento and Midtown. For many years, the most prominent feature in the corridor was the elevated Capital City Freeway (formerly Business 80).

Capitol View Protection Ordinance

Section 17.96.100 of the Sacramento City Code was established in February 1992 to recognize the State Capitol building and the surrounding grounds of Capitol Park as a unique cultural and open space resource. The ordinance establishes building height limits, setback requirements and parking alternatives within a portion of the Central Business District surrounding Capitol Park. These regulations are designed to provide visual protection to and from the Capitol building and Capitol Park.

American River Parkway Plan

The American River Parkway Plan, developed by the City and County of Sacramento, is a policy and action document that was developed to ensure preservation of the naturalistic environment of the American River Parkway, while providing limited developments to facilitate human enjoyment. The Parkway Plan addresses the entire length of the Parkway, which includes areas in Sacramento County, the City of Sacramento, and a portion of the Folsom State Recreation Area (Sacramento County 2008).

Findings

- The Policy Area is characteristic of an urban environment. It contains important scenic quality features, such as the prevalence of trees, the Sacramento and American rivers, American River Parkway, the State Capitol, Capitol Park, and numerous cultural landmark structures.

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