

Originally recognized as a pueblo in 1835, the City of Sonoma became an incorporated city in 1881. The largest land use designation in the city is single-family residential, which amounts to about 44 percent of the land. Public lands, at almost 21 percent, constitute the next largest category (City of Sonoma 2005).

### **3.1.3 Future Land Use**

The following section discusses land use policies that may affect the future development of agricultural and urban land uses.

#### **3.1.3.1 Agricultural Land Use and Land Use Policies**

##### **3.1.3.1.1 Land Use**

General land use patterns within the study area are not expected to change in the next 20 years, and it is anticipated that the grape growing industry will continue to be the mainstay of the local and regional agricultural economy in the Napa and Sonoma Counties. Grape prices and productivity are highly sensitive to weather conditions, the world market, and local and national economic conditions. These factors make it difficult to forecast changes in the grape growing industry, but there are some expected future trends. Napa County trends show the incorporation of smaller grape growers (those holding between 10 and 20 acres) by larger growers (those holding 50 or more acres) and by vineyards that wish to consolidate production under one main company (Godoy 2003). Although some Sonoma County grape growers are selling parcels to other grape growers, this will not vastly change the total acreage for vineyard-designated land, at least in the near term (Vernon 2003, Ramey 2003).

Over a 20-year time horizon, it cannot be predicted how long hay will remain a major agricultural crop in Napa and Sonoma Counties. In Napa County, many of the sites used to plant hay crops have been switched to more permanent vineyards, which may be a continuing trend. Some hay land has been converted into vineyards in Sonoma County, but this does not appear to be a continuing trend (Vernon 2003, Ramey 2003). In Marin County, agricultural land for hay is expected to remain unchanged (City of Novato 2003).

##### **3.1.3.1.2 Land Use Policies**

Some cities and counties in the North Bay, such as Sonoma County, have adopted strong planning policies that preserve agricultural land from urban development. Land use policies do not preclude the possibility of changes among crop type; however, the economic value of grape production, in relation to other crops such as oat hay or pastureland, will remain a strong reason for grape crops to dominate areas where soils allow their growth. Each of the cities within the study area utilizes urban growth boundaries to restrict urbanization. These urban limits serve as growth management mechanisms to maintain a balance between land uses.

The following is a brief overview of objectives and policies to protect conversion of agricultural land to non-agricultural uses from planning documents for Marin, Napa, and Sonoma Counties.

Policies to protect agricultural land in Marin County include:

- “Maintain agricultural production as the principal use on agricultural lands by limiting residential development to that which is reasonably related to agriculture.”
- “Maintain very low-density agricultural zoning in the Inland Rural and Coastal Corridors to support land-extensive agricultural production and discourage conversion to non-agricultural uses.”
- “...Ensure that development standards preserve and enhance nearby agricultural uses.”
- “Encourage private and public land owners of lands that have traditionally been used for agriculture to keep land in agricultural use by continuing existing agricultural uses, developing compatible new agricultural uses, and/or leasing lands to agricultural operators.” (County of Marin 2005)

Land use policies for Napa County include:

- “The County will enact and enforce regulations which will retain agriculture as a major source of income and employment in Napa County.”
- “The County will initiate studies to evaluate means, methods, advantages and disadvantages of placing the existing agricultural preserve plus potential agricultural acreage under permanent land use protective controls. The County will develop additional types of Agricultural Preserves suitable for localized conditions in such places as Carneros, Coombsville and Congress, Foss, Gordon, Capell, Chiles and Pope Valleys, and hillside viticultural areas.”
- “The County will develop planning concepts and zoning standards designed to minimize conflicts arising from encroachment of urban uses into agricultural areas.”
- “The County will reserve prime agricultural lands for agricultural use.” (County of Napa 2002)

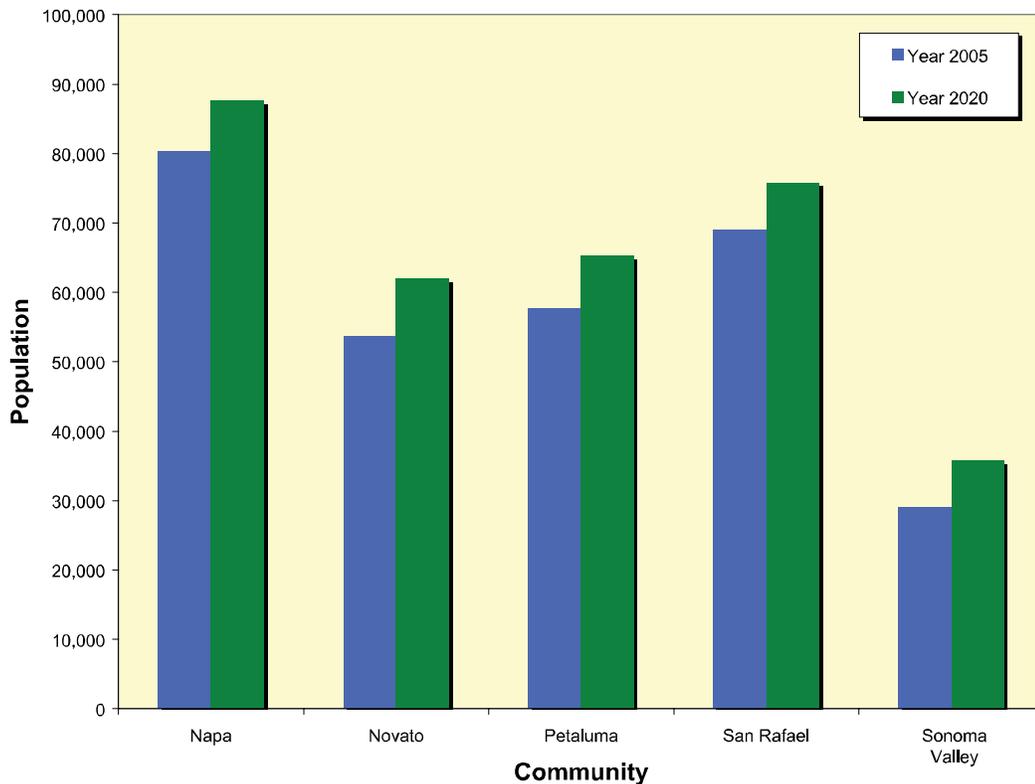
Policies to protect agricultural land in Sonoma County include:

- “Avoid conversion of lands currently used for agricultural production to non-agricultural use.”
- “Agricultural lands not currently used for farming but which have soils or other characteristics which make them suitable for farming shall not be developed in a way that would preclude future agricultural use.”
- “Discourage uses in agricultural areas that are not compatible with long term agricultural production.” (County of Sonoma 2006)

While the agricultural land use policies do not specifically address issues of water management in the region, they do clearly reflect a bias toward retaining the economic, social and environmental value of agriculture. Future water management policies, including those of the Project, must be supportive of these land use objectives.

### 3.1.3.2 Urban Land Use and Land Use Policies

Based on city and county land use goals, it is assumed that urban growth in the study area will occur mainly in or near the existing urban areas. Areas zoned as urban land generally apply to residential, commercial, industrial, public land, and open space (such as parks) categories. Future urban growth largely will not be seen on the rural diked baylands, which are primarily designated for agricultural use. Figure 3-5 presents the 2005 and 2020 projected population for the cities within the study area.



Sources: Association of Bay Area Governments 2004, SCWA 2001a

**Figure 3-5**  
Projected Urban Residential Population Growth in the Study Area

In order to maintain a balance between population growth and decreasing available land, each city has adopted land use policies and strategies. One such growth mechanism is an urban limit line, or urban growth boundary, which geographically defines a separation from open space and agricultural lands surrounding each city in

the study area. The data in Figure 3-5 represents the population within each city's sphere of influence, the entire area to which they are allowed to provide city services.

Under the City of Napa's General Plan, the Rural Urban Limit (RUL) encompasses all land envisioned for urban development through the year 2020 (City of Napa 2003). The RUL ultimately limits growth to approximately 85,000 residents (Napa Valley Economic Development Corporation 2002). The General Plan provides for the maintenance of the city's surrounding open space/agriculture to separate Napa from other communities in the future (City of Napa 2003).

The City of Novato's General Plan designates concentrated clusters of commercial development to service the increasing number of households. The City expects buildout to occur later than 2015 (City of Novato 2003). The General Plan supports clustering of development for continued protection of agricultural and open space land uses such as areas that border San Pablo Bay and along the Petaluma River, which forms the northeast border of Novato's sphere of influence.

The City of Petaluma plans to maintain city-centered development and prevent urban growth onto agriculturally viable lands through the urban limit line, which remains effective until 2018. The City of Petaluma has a growth policy that restricts single-family home construction to no more than 500 units per year (City of Petaluma 2005).

The City of San Rafael expects that the amount and type of urban areas will remain essentially the same in 2020 as they are today because few vacant parcels remain (City of San Rafael 2003). The City expects growth to occur mainly through infill and redevelopment.

In 2000, population estimates for the City of Sonoma and the Valley of the Moon Water District (VOMWD) service area were 9,282 and 20,580, respectively. Population projections for the year 2020 for the Sonoma and VOMWD are 13,482 and 22,810, respectively. The population figures for Sonoma are based on information from the City's Planning Department. The figures for VOMWD are based upon a 0.5 percent annual growth rate, determined by VOMWD staff projections (SCWA 2001a).

The City of Sonoma is expecting an increase in population of approximately 45 percent and VOMWD is expecting one of about 10 percent. Overall, Sonoma Valley expects an increase in population of approximately 21 percent by 2020.

## 3.2 Soil Conditions

This section discusses the suitability of soils in the study area for intensive agriculture. This information is presented to identify potential future agricultural growth in the study area.

The Storie Index rating system is one factor used by Land Evaluation and Site Assessment (LESA) Models to evaluate agricultural land value. LESA is designed to provide an objective rating of the agricultural suitability of land compared to

demands for nonagricultural uses of lands. LESA uses the Storie Index in conjunction with Land Capability Classifications to determine the land evaluation portion of the LESA-based score.

The Storie Index is a 100-point scale (with 100 as the highest score) rating the relative degree of suitability or value of a given soil for intensive agriculture, based only on soil characteristics and qualities. Profile characteristics, texture of the surface layer, slope, and other factors such as drainage and salinity are the four factors represented in the Storie Index rating (California Department of Conservation 1997). Soils are grouped and rated primarily on the basis of their capability to produce common cultivated crops and pasture plants without deteriorating over a long period of time.

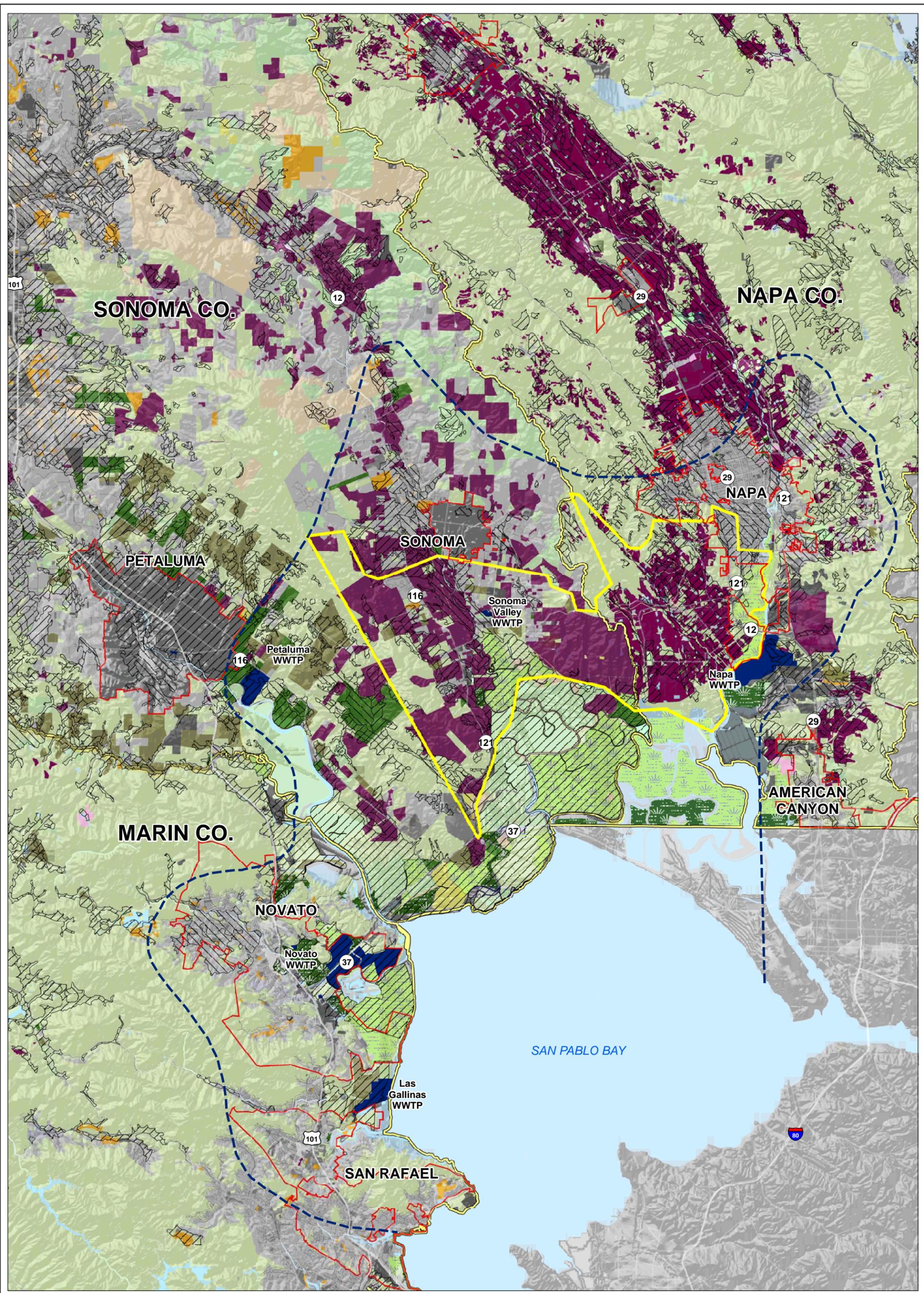
The U.S. Department of Agriculture prepares lists of Storie ratings for soils in Marin, Napa, and Sonoma Counties corresponding to the soil abbreviations used on soil survey maps. Figure 3-6 presents soils in the study area with moderate to high Storie Index ratings, grouped as 40 to 60 points and 61 to 100 points (U.S. Department of Agriculture 2005a, 2005b, and 2005c).

As shown in Figure 3-6, the majority of the study area's agricultural soils have a Storie Index rating of 40 or higher, indicating the soils are suitable for intensive agriculture. Much of the land around the City of Napa has a high Storie Index rating; however, most of the land which is not used for agriculture is already urbanized. There are some pockets of soils with a Storie Index greater than 60 on the northeastern edges of Napa that are currently unimproved or vacant land. In the Sonoma area, there is only one area of non-farmed, non-urbanized, highly suitable land remaining, which is east of Sonoma's urban growth boundary. It is currently dotted with vineyards, and is just outside the Los Carneros American Viticultural Area. South of the Sonoma Valley County Sanitation District wastewater treatment plant, there are a few areas of moderate Storie Index (40-60) parcels that are currently vacant or unimproved. The areas southwest of Petaluma have the greatest amount of vacant moderate to high Storie Index-rated soils, but much of that land is in the hills, which makes intensive agriculture more difficult to implement.

Compared to the overall acreage of the study area, there are few non-urbanized areas not already under agricultural use that have moderate to high rated soils. It appears that much of the desirable agricultural land area has already been developed. There is a low probability of new growth of high quality agriculture in the study area.

### **3.3 Biological Resources**

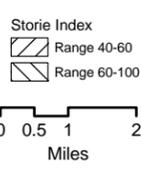
Wildlife habitat areas in the study area include riparian areas, mudflats, salt evaporation ponds, levees, vegetated and unvegetated tidal marsh, disturbed marsh/leveed baylands, seasonal wetlands, human-made structures, and grassland (Jones and Stokes 2003). These areas host some species that exist almost exclusively in these ecosystems, such as the California black rail and the clapper rail. The Project's environmental analysis will include a more detailed analysis of biological resources in the study area and potential effects of the project.



Basemap: U.S. Department of Agriculture, 2001  
 Land Use Data: California Department of  
 Water Resources, 1999a and 1999b,  
 Napa Sanitation District 2005, SCWA 2001.  
 Storie Index Data: US Department of  
 Agriculture 2005 a, 2005b, and 2005c.  
 Los Carneros AVA Data: Carneros Wine Alliance 2006.

**Legend**

- Initial Study Area Boundary
- Los Carneros American Viticultural Area
- Urban Growth Boundary
- Completed Restoration
- Natural Restoration
- Planned Restoration
- Dairy, Pasture
- Unimproved/Vacant Land
- Dry Farm Property
- Irrigated Farm Property
- Residential
- Commercial
- Industrial
- Orchard
- Vineyard
- Golf Course, Cemetery, Parks, and Landscaping
- Miscellaneous/Unknown
- Government Developed Land
- Water Body



**Figure 3-6  
Soil Suitability in  
the Study Area**

### 3.3.1 Local Native Species

Most agricultural baylands in the study area support shallow, seasonally ponded wetlands and some upland plants. Agricultural baylands are important as roosting and feeding habitat for wintering shorebirds. Within agricultural baylands, areas of shallow seasonal ponds, typically less than six inches deep, are the most important habitats for shorebirds and waterfowl. Diked marshland usually occurs in low areas adjacent to levees or ditches that have no or poor drainage. In areas where they are near tidal marshes, they can be particularly valuable as high tide refuge for small mammals and roosting habitat for shorebirds and waterfowl (U.S. Environmental Protection Agency [EPA] 1999). The baylands in the study area provide some form of shelter, food, or other ecological benefit to over 500 species of fish, amphibians, reptiles, birds, and mammals (US EPA 1999).

Many special-status species exist or have the potential to exist in habitat areas found in the study area. The CNPS designation helps explain the status of species existing in the study area, but the designation does not carry legal status under the National Environmental Policy Act. CNPS designations serve primarily as a source of baseline information on species potentially existing in the study area.

### 3.3.2 Wetlands Programs

Since the population of the San Francisco Bay area began to grow 150 years ago, approximately 95 percent of the tidal wetlands have been destroyed. These wetlands have been filled-in primarily for residential, commercial, and agricultural purposes. Wetlands provide many essential uses, including:

- Habitat for many species of wildlife, including threatened and endangered animals;
- Flood control by storing rainfall and then slowly releasing it;
- Pollutant filtration; and
- Recreational and educational opportunities.

The study area includes areas of coastal wetlands, both tidal and non-tidal, that serve as important estuarine habitats. Tidal wetlands include marshes and swamps that are flooded by the tides. Non-tidal wetlands occur along rivers and lakes and exist at sea level, but are too far inland to be tidally influenced.

Table 3-1 presents existing and completed wetlands programs near the study area, along with the acreage, the sponsors involved, and the type of wetland. The largest planned wetlands project in the study area is the restoration of the Napa Salt Ponds, which involves 4,347 acres. Skaggs Island, a former tidal wetland converted into a now abandoned military site, is also another large wetland restoration project. The Bay Institute is working to incorporate the island into the San Pablo Bay National Wildlife Refuge (The Bay Institute 2003).

The Napa Salt Ponds restoration is specifically included as one of the project areas that will receive recycled water under the Project (see Section 6 for more details). The implementation of the Project will provide future opportunities for the study area agencies to provide recycled water for wetlands restoration uses.

<b>Programs</b>	<b>Acres</b>	<b>Sponsors <sup>(1)</sup></b>	<b>Status</b>	<b>Type</b>
Camp Two	608	CDFG; Ducks Unlimited; NAWCA	Planned	Nontidal
Cullinan Ranch	1,564	USFWS; CALFED; Ducks Unlimited	Planned	Tidal
Napa River - Pond 8	102	Ducks Unlimited; CDFG	Planned	Tidal
Napa River Flood Control Project	722	Napa County; Napa County Land Trust; CALFED; USACE	Planned	Tidal
Napa Salt Ponds	720	CDFG; USACE; SCWA; State Coastal Conservancy	Planned	Nontidal
Petaluma Marsh Expansion	172	Marin Audubon Society; State Coastal Conservancy; CALFED	Planned	Tidal
Ringstrom Bay Enhancement	207	Ducks Unlimited; CDFG; NAWCA	Planned	Nontidal
Schellville Restoration and Flood Control Project	387	Southern Sonoma County Resource Conservation District	Planned	Mixed
Sears Point Wetlands	2,300	Sonoma Land Trust	Planned	Mixed
Simmons Slough Corridor	186	Marin Audubon Society; RWQCB; CDPR	Planned	Nontidal
Skaggs Island - Navy	3,084	USFWS; Caltrans	Planned	Tidal
<b>Completed Projects</b>			<b>Year Completed</b>	<b>Type</b>
Viansa Winery	94	Viansa Winery; Ducks Unlimited	1993	Nontidal
Petaluma River Marsh	46	Sonoma Land Trust; CDFG	1994	Tidal
Rush Creek/Cemetery Marsh Enhancement	272	Marin Audubon Society; Marin Community Fund; State Coastal Conservancy	1999	Nontidal
Sonoma Baylands	303	Sonoma Land Trust; State Coastal Conservancy; Port of Oakland	1996	Nontidal
Tolay Creek	400	USFWS; CALFED; CDFG; Ducks Unlimited	1999	Tidal
Guadalcanal Village	56	Caltrans	2001	Tidal
Tubbs Island Levee Setback	68	Ducks Unlimited; NAWCA; USFWS	2002	Tidal
North Parcel - Leonard Ranch Tidal Wetlands Restoration	331	Sonoma Land Trust; State Coastal Conservancy; NRCS; NAWCA	2003	Nontidal
Napa Salt Ponds	4,347	CDFG; State Coastal Conservancy; USACE; SCWA	2007	Tidal
Napa River Flood Control Project	218	Napa County; Napa County Land Trust; CALFED; USACE	Not Available	Nontidal

Source: Holmes 2008

<sup>(1)</sup> CALFED = California Bay-Delta Authority, CDFG = California Department of Fish & Game, CDPR = California Department of Pesticide Regulation, Caltrans = California Department of Transportation, NAWCA = North American Wetlands Conservation Act, NRCS = Natural Resources Conservation Service, RWQCB = San Francisco Bay Regional Water Quality Control Board, USACE = U.S. Army Corps of Engineers, USFWS = U.S. Fish and Wildlife Service