

Section 3

Existing and Future Regional Conditions

As stated in earlier sections of the North San Pablo Bay Restoration and Reuse Project (Project) Engineering and Economic/Financial Analysis Report, the physical and environmental conditions of the North San Pablo Bay study area are unique. They deserve special understanding, as policies on water management in the region could influence future development of the area. The issues of greatest relevance to the Project feasibility study include the inherent tension between agricultural and urban land use, as well as the desire and need to protect and enhance valuable resources of the region's water environment.

This section evaluates the physical and environmental conditions of the Project's initial study area¹, focusing on the region's land use, soil conditions, biological resources, and wetlands.

3.1 Land Use

The following section discusses the historical and existing land uses in the North San Pablo Bay study area, with a focus on the existing agricultural and urban uses. The description of agricultural land use includes an analysis of grape and hay production, and the discussion of urban land use includes policies to manage urban growth. This section also includes future land uses and policies and provides information on likely conditions during the implementation time frame. This information assumes that implementation of the Project would not change or direct land uses.

3.1.1 Historical Land Use

The area surrounding San Pablo Bay includes parts of Marin, Napa, and Sonoma Counties, and the Cities of Napa, Novato, Petaluma, San Rafael, and Sonoma. San Pablo Bay also borders the southern ends of Napa, Petaluma, and Sonoma Valleys. Like much of California, this area was initially settled by Native Americans. By the 1800s, the North Bay was under the control of the Mexican government and dotted with towns developed through the mission system. In the 1830s, the region was split up by land grants to Mexican settlers or members of the Mexican Army and their families. Many of the land grants in the present Los Carneros region were then further divided and sold to settlers. The area supported farming as early as the 1850s and by the 1880s was known for its orchards, hay, cattle, sheep, and grapes. One of the earliest vineyards in the Los Carneros area was planted in the late 1830s. (Carneros Wine Alliance 2006, City of Novato 2006a)

¹ The City of Petaluma is included in the initial study area. After initial evaluation was concluded, Petaluma decided not to participate in the Project. See Section 1.3 for a discussion of Petaluma's participation.

The area just north of San Pablo Bay historically consisted of tidal marshes. These marshes were diked in the late 1800s and early 1900s for hay and grain production and are known today as the diked baylands. Currently, very little intensive agricultural activity² takes place on the diked baylands; the most intensive farming occurs in the Los Carneros region between the Napa and Sonoma Valleys (San Francisco Bay Conservation and Development Commission [BCDC] 1999). Extensive agriculture³ is the dominant land use on the diked baylands.

3.1.2 Existing Land Use

This section discusses the existing land uses in the study area and factors that may affect future changes in land use. Figure 3-1 shows the existing land uses, presented by the major categories of residential, commercial, industrial, irrigated farm property, dry farm property, dairy/pasture, orchard, vineyard, golf course/cemetery/parks/landscaping, government developed land, unimproved/vacant land, miscellaneous/unknown, and completed and planned wetlands restoration. Land use data for Marin County was obtained from the California Department of Water Resources (DWR), Napa Sanitation District (Napa SD) and DWR provided information for Napa County, and Sonoma County Water Agency (SCWA) provided data for Sonoma County (DWR 1999a and 1999b, Napa SD 2005, SCWA 2001b). A “windshield survey” was performed to verify the current land use of the larger parcels in the study area.

Individual land use designations from the three sources of land use data were grouped into the major categories mentioned above. The “orchard” category grouped deciduous fruits and nuts, and citrus and subtropical trees. “Irrigated farm property” includes rice and field, truck, nursery, and berry crops. “Dairy/pasture” consists of dairies, dairies with residences, and semi-agricultural areas. “Urban landscaping” is covered under the golf course/cemetery/ parks/landscaping designation. “Miscellaneous/unknown land” includes areas not surveyed or not allowed to be surveyed, utility-owned land, mining rights, private roads, and well and tank sites. “Government developed land” includes federal, state, and local buildings, military installations, hospitals, government utility property, state colleges and schools, and municipal shops and yards. “Unimproved/vacant lands” consist of vacant land, vacant municipal land, native vegetation, barren lands, and wasteland.

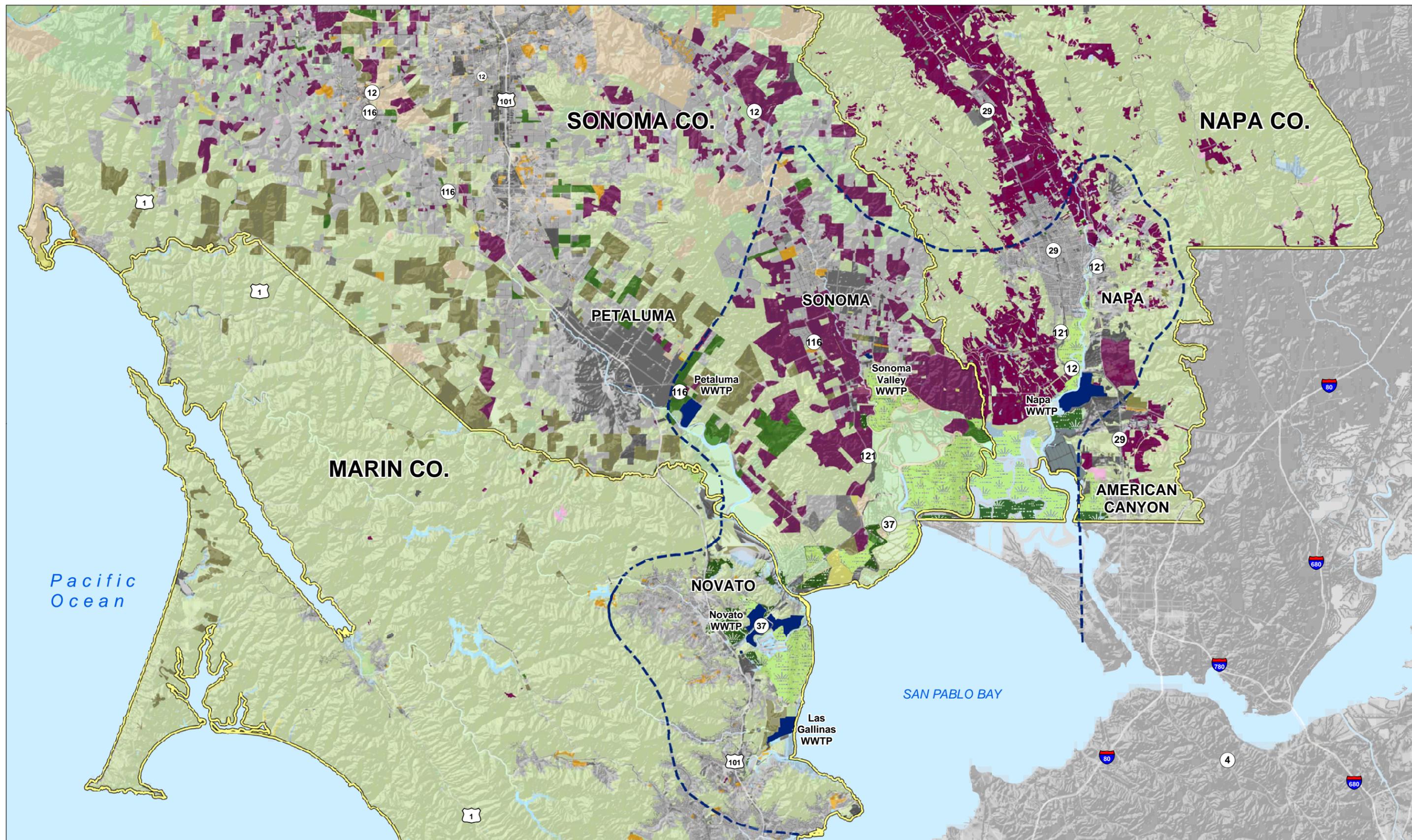
The following sections focus on agricultural land use and urban land use.

3.1.2.1 Agricultural Land Use

Agricultural land uses constitute much of the study area. The primary agricultural land uses in the southern Sonoma, Napa, and Petaluma Valleys are vineyards and hay. Vineyards exist mainly in the hillside ranges and upland areas adjacent to the diked baylands. Oat hay exists mainly on the diked baylands, and some farmers double-crop their lands with beans. In the past, farmers have grown other crops such as barley and legumes, but changes in market conditions have decreased profitability

² Intensive agricultural land is defined as irrigated land with high productivity per acre.

³ Extensive agricultural land is defined as non-irrigated land with low productivity per acre.



Basemap: U.S. Department of Agriculture, 2001
 Land Use Data: California Department of
 Water Resources, 1999a and 1999b,
 Napa Sanitation District 2005, SCWA 2001.

Legend

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

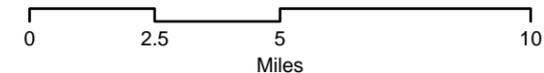


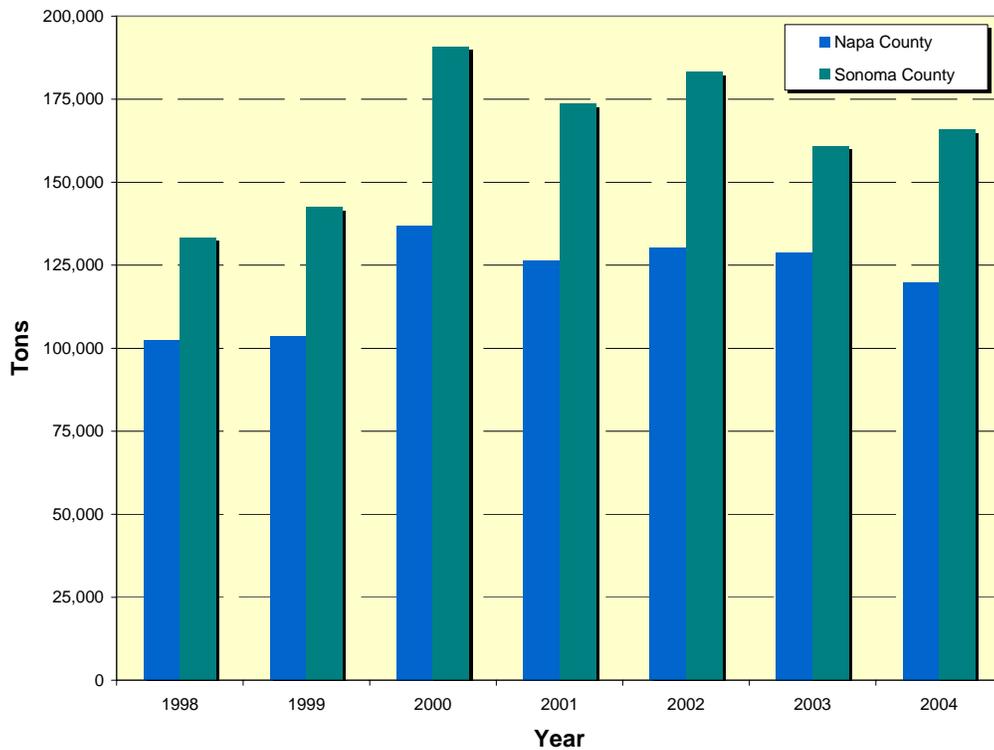
Figure 3-1
Land Uses in the Study Area



for these crops given their high production costs (BCDC 1999). Secondary land uses include dairy farming, row crops, orchards, the farming of other livestock, and grassland, which includes irrigated pastureland. Figure 3-1 illustrates the location of these land uses.

3.1.2.1.1 Grape Production

Vineyards are the agricultural mainstay in the upland areas of the study area and in the Los Carneros region in Napa and Sonoma Counties. As shown in Figure 3-2, Napa and Sonoma Counties saw a sharp increase in wine grape production from 1998 through 2000, and a mild decline from 2000 through 2004 (California Agricultural Statistics Service 1999, 2000, 2001a, 2001b, 2002, 2003, 2005). Premium wine grape crops have replaced dairies, hay farms, and orchards in many parts of Napa and Sonoma Counties. It is generally thought that the “best” grape growing properties have been cultivated; therefore, the expansion of existing vineyards or development of new vineyards means growing grapes under more compromised conditions (BCDC 1999).

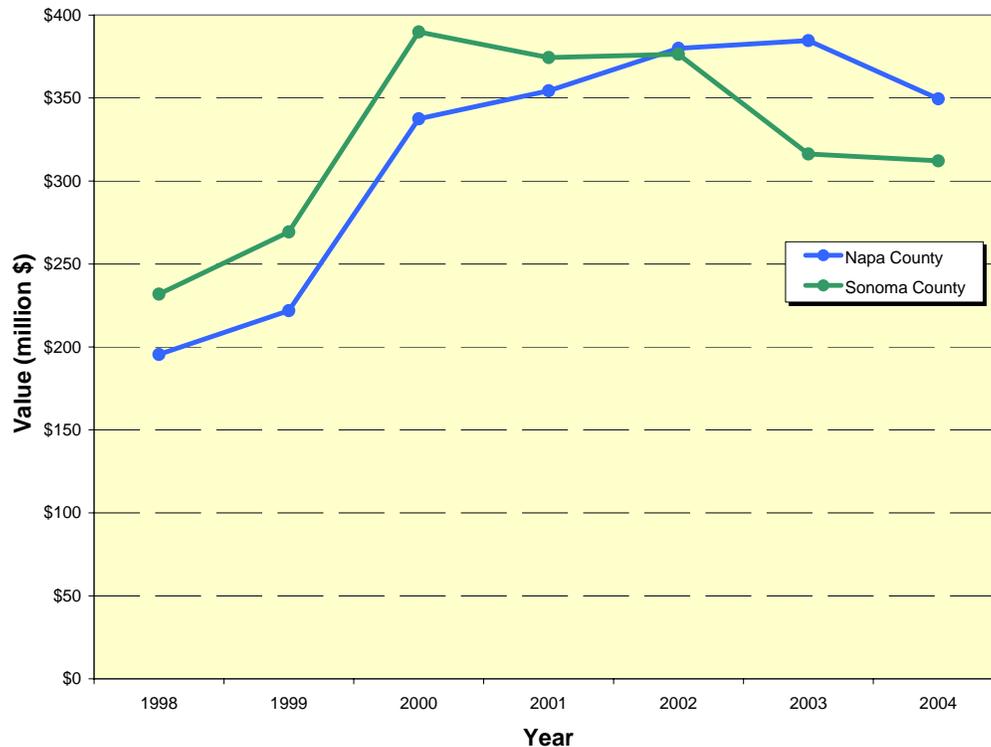


Source: California Agricultural Statistics Service 1999, 2000, 2001a, 2001b, 2002, 2003, 2005

Figure 3-2
Wine Production

The year 2000 was a notable year for wine grape production in the study area. Napa County production increased about 33,000 tons over 1999 production, a gain of about 32 percent. In Sonoma County, the production increase in 2000 was about 48,000 tons, about a 34 percent gain.

As shown in Figure 3-3, total wine grape value also had a steep increase in the year 2000 for both counties. From 2001 through 2004, Sonoma County saw a decrease in crop value, but Napa County saw moderate gains through 2003.



Source: California Agricultural Statistics Service 1999, 2000, 2001a, 2001b, 2002, 2003, 2005

Figure 3-3
Total Wine Grape Value in Napa and Sonoma Counties, 1998-2004

Wine grape value per ton in Napa County steadily increased from 1998, peaking at close to \$3,000 per ton in 2003. For Sonoma County, the peak value per ton occurred in 2001 at about \$2,100 per ton (California Agricultural Statistics Service 1999, 2000, 2001a, 2001b, 2002, 2003, 2005).

Mass plantings of grape vines in 1998 marked that year as an exceptionally strong season. In reaction to the growing economic strength of grape production in Napa and Sonoma, land prices were extremely high from 1999 to 2001 and more growers entered the market, while existing growers expanded operations (Hood 2003). This led to an over-saturation of the grape-growing market in subsequent years and since

2000 there has been a slow recovery. The economic downturn and wine surplus early this decade caused some grape growers to sell their parcels to larger growers; this especially occurred in Sonoma County (Hood 2003).

Marin County has a limited wine grape industry. From 1999 through 2004, the highest production was 228 tons of grapes, occurring in 2001. The value of that year's crop was about \$465,000. For the other years of that period, the average annual production was about 134 tons and the average annual production value was about \$257,000 (California Agricultural Statistics Service 1999, 2000, 2001a, 2001b, 2002, 2003, 2005).

3.1.2.1.2 Hay Production

The combination of soils and climate in the diked baylands provide a favorable environment for hay production. The soils are poorly drained with a high salt content, which allow for a restricted number of crops to grow, one of them being oat hay. On some parcels in the study area, farmers have grown hay for generations as forage for livestock.

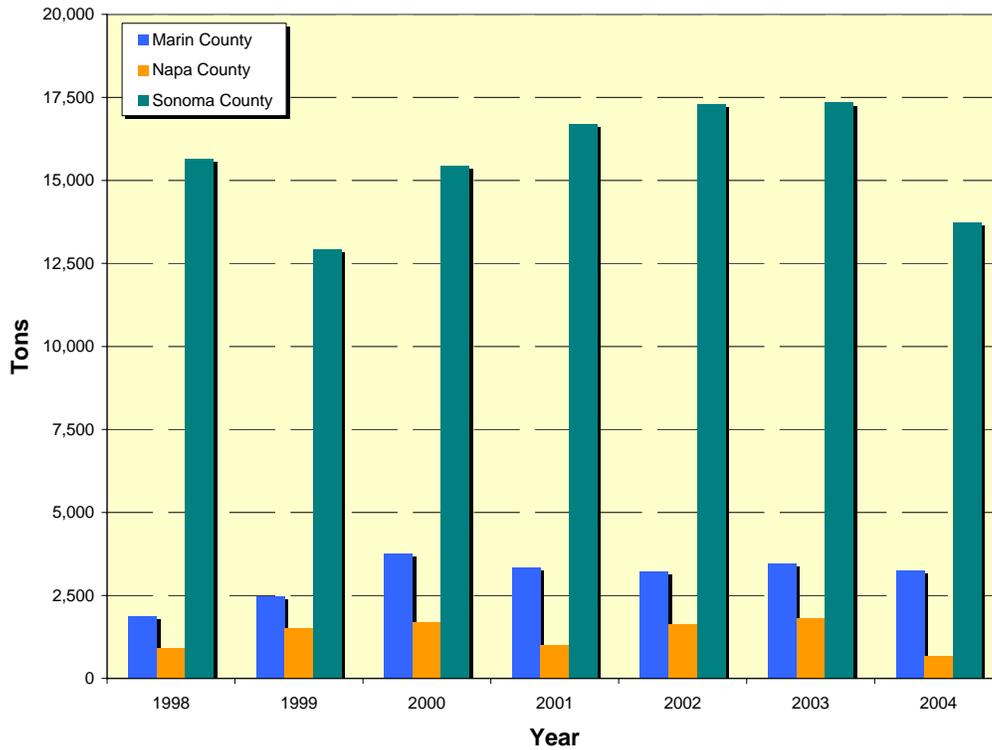
Oat hay production in Marin, Napa, and Sonoma Counties gradually increased from 1999 through 2003. All counties faced a decrease in production from 2003 to 2004, but that decrease varied by county – about 7 percent for Marin County, about 64 percent for Napa County, and 21 percent for Sonoma County (California Agricultural Statistics Service 1999, 2000, 2001a, 2001b, 2002, 2003, 2005). Figure 3-4 shows that Sonoma County produced on average 13 times more oat hay than Napa County over those 7 years (California Agricultural Statistics Service 1999, 2000, 2001a, 2001b, 2002, 2003, 2005).

3.1.2.2 Urban Land Use

Urban land uses in the initial study area include residential, commercial and light industry, public facilities, conservation areas, heavy industry, and undesignated urban land. Cities in the initial study area include Napa, Novato, Petaluma, San Rafael, and Sonoma.

The City of Napa, incorporated in 1872, has a land area of about 18 square miles (City of Napa 2003). Napa has numerous neighborhood, community, and regional parks, as well as wetlands and natural open areas. The preservation of historic neighborhoods and buildings are balanced with mixed-use areas of retail, office, and commercial spaces.

Incorporated in 1960, the City of Novato covers 28 square miles. In contrast to nearby cities, Novato's population density is low – one-half that of San Rafael and less than one-third that of Petaluma. This low density and the city's large segments of parks and open space create a rural character (City of Novato 2006b). In the study area portion of Novato, the commercial, manufacturing, and light industrial classifications include lands mostly near Highways 37 and 101.



Source: California Agricultural Statistics Service 1999, 2000, 2001a, 2001, 2002, 2003, 2005

Figure 3-4
Total Oat Hay Production in Marin, Napa, and Sonoma Counties, 1998-2004

The City of Petaluma⁴ covers approximately 14 square miles in the center of Sonoma County and was incorporated as a charter city in 1858. Rural and open space lands border the City, which lies within a flat plain separated by hills from the Sonoma Valley to the east. The City began as a center of produce shipping, supplying the San Francisco Bay Area with the harvests from the Petaluma River valley and coastal plain. Residential neighborhoods and traditional industries, such as agricultural and construction-related operations, characterize the city (City of Petaluma 2005).

Incorporated in 1874 and later as a charter city in 1913, the City of San Rafael is the county seat for Marin County and has the largest population in the county. The city covers 22 square miles, five of which are water and tidelands. San Rafael has set aside 3,285 acres of open space within the city limits and almost 7,300 acres in its planning area (City of San Rafael 2003).

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