

CHAPTER 2

Project Description

2.1 Introduction

Recognizing the growing need for an integrated and regional approach to water management, four wastewater utilities and one water agency in the North San Pablo Bay region of California have joined forces to plan a project that would promote the expanded beneficial use of recycled water regionwide.

The proposed North Bay Water Recycling Program (NBWRP) would build on commitments to long-term inter-agency cooperation to address common needs related to reliable water supplies and enhanced environmental restoration. As implementation of the Project would likely require external funding assistance, the investigation and development of the Project is being carried out in conformance with the requirements of the U.S. Department of the Interior's Bureau of Reclamation Public Law 102-575, Title XVI, which provides a mechanism for federal participation and cost-sharing in water reuse projects.

The North Bay Water Reuse Authority (NBWRA), established under a Memorandum of Understanding (MOU) in August 2005, is comprised of four wastewater utilities: Las Gallinas Valley Sanitary District (LGVSD), Novato Sanitary District (Novato SD), Sonoma Valley County Sanitation District (SVCSD), Napa Sanitation District (Napa SD), and Sonoma County Water Agency (SCWA). Additional agencies supporting the NBWRA through contribution of funds and staff time include North Marin Water District (NMWD) and Napa County.

Under the MOU, the NBWRA is exploring "the feasibility of coordinating interagency efforts to expand the beneficial use of recycled water in the North Bay Region thereby promoting the conservation of limited surface water and groundwater resources." The NBWRP would alter the disposition of recycled water in the North Bay Region by providing increased recycled water supply to urban, agricultural and environmental uses.

2.2 Project Purpose

The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public. The Bureau of Reclamation's water reclamation and reuse program is authorized by the Reclamation Wastewater and Groundwater Study and Facilities Act of 1992 (Title XVI of Public Law 102-575). Also known as Title XVI, the act directs the Secretary of the Interior to undertake

a program to investigate and identify opportunities for water reclamation and reuse of municipal, industrial, domestic and agricultural wastewater, and naturally impaired ground and surface waters, and for design and construction of demonstration and permanent facilities to reclaim and reuse wastewater.

The NBWRA is a cooperative program in the San Pablo Bay region that supports sustainability and environmental enhancement by expanding the use of recycled water. The purpose of the NBWRP is to provide recycled water for agricultural, urban, and environmental uses thereby reducing reliance on local and imported surface and groundwater and reducing the amount of treated effluent releases to San Pablo Bay.

2.3 Participants

The five participating agencies have organized themselves under a Memorandum of Understanding (MOU) as the NBWRA. The following agencies would participate in the implementation of the NBWRP:

2.3.1 MOU Signatory Agencies

- **LGVSD** – The LGVSD wastewater treatment plant (WWTP) provides sanitation service to approximately 30,000 people within the area of Marinwood, Lucas Valley, Terra Linda, Santa Venetia, Los Ranchitos, and Smith Ranch Road (LGVSD, 2005).
- **Novato SD** – The Novato WWTP provides service to approximately 60,000 residents within the city of Novato, an area of 28 square miles, and surrounding areas (Novato Sanitary District, 2006).
- **SVCSD** – The SVCSD WWTP began operations in 1954 and provides service to approximately 34,000 people in the city of Sonoma, within a 7-square-mile area (SVCSD, 2006).
- **Napa SD** – The Napa SD's Soscot water recycling facility treats wastewater from the city of Napa and surrounding unincorporated communities, an area of about 23 square miles, and serves a population of approximately 80,000 (Napa SD, 2007).
- **SCWA** – SCWA, which began the Title XVI process for investigating a recycled water distribution system under a Cooperative Agreement with the Bureau of Reclamation, is a wholesale drinking water provider to over 600,000 residents and continues to be an actively participating partner.

2.3.2 Supporting Agencies

- **NMWD** – NMWD has partnered with Novato SD to implement recycled water projects in their collective service areas, including a 0.5 mgd tertiary treatment facility located at the Novato SD reclamation facility. NMWD is contributing funds and staff time to the Authority.
- **Napa County** – Napa County is cooperating with Napa SD in the development of recycled water options for the Milliken-Sarco-Tulocay (MST) Creeks areas, and is contributing funds and staff time to the Authority.

2.3.3 Other Agencies Declining to Participate

During the development of the NBWRP, several other agencies were considered for inclusion. These include the City of Vallejo, American Canyon and Solano County. However, these agencies declined to participate in the initial development phases of the NBWRA. Two agencies that were included in the Phase 1 and Phase 2 Feasibility Studies prepared by the NBWRA, but have declined to participate at this time, include the City of Petaluma and Marin Municipal Water District.

- **City of Petaluma** – The City of Petaluma is not a signatory to the MOU establishing the NBWRA. Given its location within the San Pablo Bay watershed, the City of Petaluma and surrounding unincorporated area was identified as a potential service area for recycled water at the onset of the project. Recognizing that the City had historically provided recycled water to golf course and agricultural customers within its city limits and surrounding unincorporated area, and was in the process of developing a Recycled Water Master Plan to increase service, the City was included as a potential participant in the Alternatives presented in the Phase 1 and Phase 2 Feasibility Studies. In written communication to the Authority, the City of Petaluma has declined to participate in the North San Pablo Bay Restoration and Reuse Project. Therefore, facilities previously identified in the Phase 1 and Phase 2 Feasibility Studies to serve the Petaluma area are not included in this EIR/EIS analysis.

The City of Petaluma is moving forward with its Recycled Water Master Plan; a Draft EIR for the project was circulated in July of 2008, and was certified by the City Council in November 2008. This project is further reviewed in Section 4, Cumulative Impacts, as a cumulative project occurring within the North San Pablo Bay Watershed.

- **Marin Municipal Water District** – Marin Municipal Water District (MMWD) is not signatory to the MOU, but had been identified as a potential partner with LGVSD in the implementation of recycled water service to the Peacock Gap Golf Course Area in Marin County. MMWD has declined to participate in the North San Pablo Bay Restoration and Reuse Project. Service to the Peacock Gap area will be considered for implementation by LGVSD independent of MMWD participation.

2.3.4 Proposed Federal Action

The CEQ regulations outlined in the NEPA Handbook, require an EIS to define, in a brief statement, what Federal action is under consideration. As implementation of the NBWRP would likely require external funding assistance, the investigation and development of the NBWRP is being carried out in conformance with the requirements of the U.S. Department of the Interior's Bureau of Reclamation Public Law 102-575, Title XVI, which provides a mechanism for Federal participation and cost-sharing in approved water reuse projects. The proposed Federal Action is the provision of federal funds by the Bureau of Reclamation under the Title XVI Program to NBWRA Member and Cooperating Agencies for the implementation of water recycling projects examined in this EIR/EIS. The Bureau of Reclamation is the NEPA Lead Agency for this proposed action.

2.4 Project Area

2.4.1 NBWRA Action Area

The action area, illustrated in **Figure 2-1**, extends approximately 10 to 15 miles inland from the San Pablo Bay within Marin, Sonoma, and Napa Counties. The action area extends as far south as Point San Pedro in Marin County, and as far north as Milliken Canyon located 28 miles to the northeast in eastern Napa County, and encompasses about 318 square miles of land. Urban centers in the action area are San Rafael (county seat) and Novato in Marin County, Sonoma in Sonoma County, and Napa (county seat) in Napa County. The topography of the action area consists of gently sloping river valleys, separated by northwest trending mountain ranges with steep slopes and peaks exceeding elevations of 2,500 feet above mean sea level. Flat lying mudflats and marshland border San Pablo Bay. The majority of the action area is within Napa, Sonoma, and Novato Valleys and the foothills bounding these valleys.

The action area receives water supplies from sources both within and outside the region. Water sources within the region include the Petaluma and Napa Rivers, Sonoma Creek, and Stafford Lake on Novato Creek. Surface water sources outside the region include the Russian River Project (including Lake Mendocino, Lake Sonoma, and imports from the Eel River via Pacific Gas & Electric Company's Potter Valley Project), Dry Creek, Warm Springs Creek, Lake Hennessey, Milliken Reservoir, MMWD's six Lagunitas Creek watershed reservoirs, SoulaJule Reservoir on Walker Creek, and the Sacramento-San Joaquin Delta via the State Water Project. The region relies on groundwater and recycled water as additional sources.

2.4.2 Recycled Water Service Areas

In order to form candidate recycled water projects, land use information and Member Agency recycled water planning documents were reviewed. Water and wastewater agencies in the action area have developed several existing recycled water projects and identified recycled water projects for future implementation. Additional potential recycled water project areas were identified by grouping land uses either in major agricultural or landscaping areas or in areas between existing and proposed projects. These potential recycled water use areas are summarized in **Table 2-1** and are described below. Potential recycled water use areas are shown in **Figure 2-2**.

- **Peacock Gap Golf Course** – LGVSD proposes to serve recycled water to the Peacock Gap Golf Course at the eastern end of San Rafael. In 2008, the golf course and neighboring facilities was estimated to use about 437 AFY (Nute, 2008).
- **North Marin Water District (NMWD) Urban Reuse Project Area** – Under the originally proposed NMWD Urban Reuse Project, Novato SD was estimated to provide 1,312 AFY of recycled water for urban landscaping in the City of Novato (Nute Engineering, 2004^[k1]). Please see **Appendix 2** for anticipated recycled water users in the Novato SD service area.



SOURCE: CDM, 2008

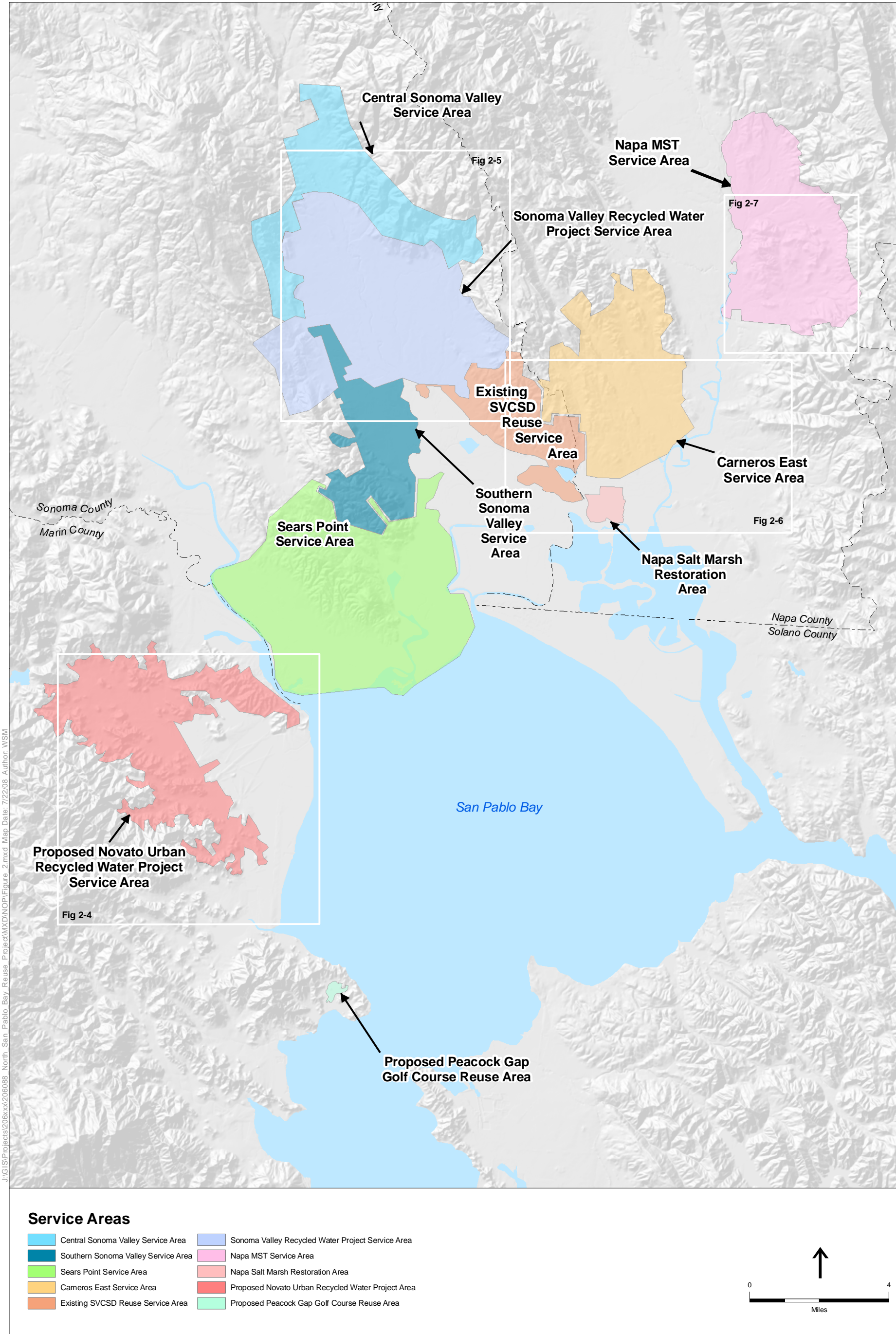
NBWRA North Bay Water Recycling Program 206088.01

Figure 2-1
Action Area

**TABLE 2-1
RECYCLED WATER SERVICE AREAS**

LGVSD
<ul style="list-style-type: none"> • Peacock Gap Golf Course
Novato SD
<ul style="list-style-type: none"> • North Marin Water District Urban Reuse Project Area • Sears Point
SVCSD
<ul style="list-style-type: none"> • Sonoma Valley Recycled Water Project Area • Napa Salt Marsh Restoration Area • Southern Sonoma Valley • Central Sonoma Valley
Napa SD
<ul style="list-style-type: none"> • Milliken-Sarco-Tuluca Creeks Area • Carneros East

- **Sears Point** – The land in the vicinity of Sears Point lies in between SVCSD WWTP and Novato SD WWTP, but is not currently served with recycled water. This area could act as a convenient link between these treatment plants. The Sears Point reuse area encompasses 326 acres of dairy/pasture land, 76 acres of irrigated farm land, and 1,236 acres of vineyards for a total of about 1,638.
- **Sonoma Valley Recycled Water Project Area** – SVCSD is developing the Sonoma Valley Recycled Water Project, which identified about 1,015 acres of dairy/pasture land, 234 acres of urban landscaping, 2 acres of irrigated farm land, and 6,249 acres of vineyards, for a total of about 7,500 acres.
- **Southern Sonoma Valley** – The area south of the City of Sonoma is dedicated predominantly to vineyard uses and is close to the SVCSD WWTP. The Southern Sonoma Valley reuse area includes 55 acres of dairy/pasture land, 48 acres of urban landscaping, and 4,005 acres of vineyards, for a total area of 4,108 acres.
- **Central Sonoma Valley** – The Central Sonoma Valley reuse area is located north of the proposed Sonoma Valley Recycled Water Project, and includes additional vineyard areas in the valley still relatively close to the SVCSD WWTP. It encompasses 51 acres of urban landscaping, 258 acres of irrigated farm land, and 2,929 acres of vineyards, for a total area of 3,237 acres.
- **Napa Salt Marsh Restoration Project Area**– The Napa River Salt Marsh Restoration Project consists of restoration of tidal wetlands and enhancement of managed ponds in the Napa Sonoma Marsh Wildlife Area. Two water sources have been evaluated for habitat and bittern dilution operations: Napa River and slough diversions via planned levee breaches, and construction of a recycled water pipeline from the SVCSD WWTP and the Napa SD WWTP. The use of recycled water would be confined to Ponds 7 and 7A of the Napa Salt Marsh. Recycled water would be used to dilute bittern within ponds 7 and 7A and would not involve the breaching of levees.



SOURCE: CDM, 2008; ESRI, 2006; and ESA, 2008
Note: Existing Water Distribution Facilities Not Shown

NBWRA North Bay Water Recycling Program. 206088.01
Figure 2-2
Service Areas

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- **Milliken-Sarco-Tulucay Creeks (MST) Area** – Napa SD’s *Recycled Water Expansion Hydraulic and Preliminary Engineering Analysis: Phase 1 Report – Milliken-Sarco-Tulocay Area* indicates that Napa SD’s MST area potentially consists of 4,335 acres (3,856 acres of vineyards, 389 acres of urban landscaping, and 90 acres of golf course/cemeteries) (Brown and Caldwell, 2007).
- **Carneros East** – Napa SD’s *Strategic Plan for Recycled Water Use in the Year 2020* included the development of alternatives for a recycled water system to serve two areas of southern Napa County (LWA, 2005). According to the land use data used for the Project, Napa SD’s Carneros East reuse area consists of about 6,654 acres of vineyards in the Napa County portion of the Los Carneros American Viticulture Area (AVA).

2.5 Project Objectives

In addition to the purpose and need for the proposed Federal Action identified in Section 2.3.4, the following project objectives have been developed by the NBWRA for the NBWRP. The project is proposed to promote the expanded beneficial use of recycled water in the North Bay region to achieve the following objectives:

- Offset urban and agricultural demands on potable water supplies;
- Enhance local and regional ecosystems;
- Improve local and regional water supply reliability;
- Maintain and protect public health and safety;
- Promote sustainable practices;
- Give top priority to local needs for recycled water, and;
- Implement recycled water facilities in an economically viable manner.

All of the Member Agencies already have existing recycled water programs. The NBWRA anticipates that provision of recycled water from the Proposed Action will be made available for use to new and existing water customers on reasonable terms and conditions. As appropriate, fee structures for recycled water have been or will be developed by Member Agencies within the context of each agency’s rules, regulations and financial planning.

2.6 Action Alternatives to be Considered

2.6.1 Action Alternatives Summary

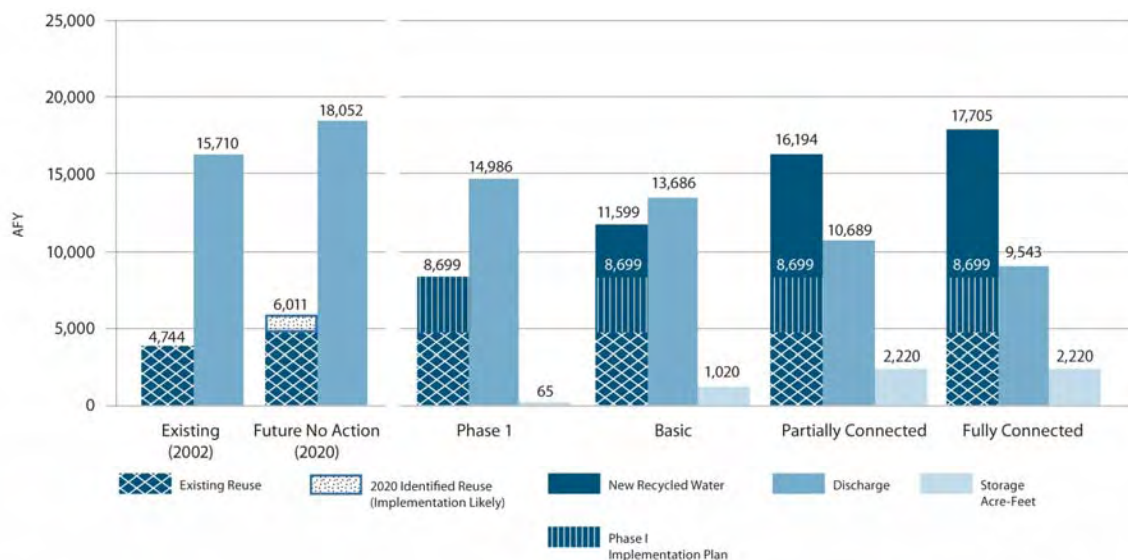
This EIR/EIS considers the No Project Alternative, a No Action Alternative and three Action Alternatives. The Action Alternatives consist of treatment, transmission, and storage facilities necessary to meet a range of recycled water demand scenarios within the NBWRA service area through 2020. Each Action Alternative considers varying levels of recycled water use, and corresponding levels of regional facility integration. The Phase 1 Implementation Plan (discussed in Section 2.6.2 below) represents the set of projects, common to all of the NBWRP alternatives, which are defined to a level of detail that allows for project-level analysis, and would likely be

the first phase implemented under any alternative. The No Project Alternative, No Action Alternative and Action Alternatives are as follows:

- **No Project Alternative**, assumes that the proposed project is not implemented, and reviews two scenarios: 1) consideration of existing conditions without the project, a “no build scenario”; and 2) consideration of “reasonably foreseeable” future conditions without the project. This second scenario is identical to the No Action Alternative, identified below.
- **No Action Alternative**, provides a “future without the project” scenario as a baseline to compare the impacts of the proposed Action Alternatives.
- **Alternative 1, Basic System**, includes use of recycled water near each of the individual WWTPs;
- **Alternative 2, Partially Connected System**, adds additional pipelines, pump stations and storage to partially connect the existing WWTPs; and
- **Alternative 3, Fully Connected System**, provides a fully integrated recycled water distribution system connecting all four Member Agency WWTPs.

A comparison of each alternative in terms of the amount of recycled water made available, the corresponding amount of discharge to tributaries of North San Pablo Bay, and the amount of storage necessary to provide the level of recycled water use is provided in **Chart 1**, below.

Table 2-2 summarizes the existing and future recycled water supply demand and resulting discharge that would occur under Alternatives 1, 2, and 3.



SOURCE: ESA

North Bay Water Reuse Authority . 206088

Chart 1
Existing and Future Conditions (2020) vs. Proposed Project
Recycled Water, Discharge, Storage
(Acre-Feet Per Year)

**TABLE 2-2
ALTERNATIVES SUMMARY –
RECYCLED WATER SUPPLY, DEMAND, AND RESULTING DISCHARGE (AFY)**

Alternatives	WWTP Service Area	WWTP Inflow (2020)	Existing Recycled Water Demand	New Recycled Water Demand (Beneficial Reuse)	Total Recycled Water Demand	Discharge to San Pablo Bay¹
Alternative 1: Basic System	LGVSD and Novato WWTPs	12,347	1,172	744	1,916	8,643
	SVCSD and Napa WWTPs	15,308	3,772	5,911	9,683	5,043
	Total	27,655	4,944	6,655	11,599	13,686
Alternative 2: Partially Connected System	LGVSD and Novato WWTPs	12,347	1,172	2,477	3,619	8,032
	SVCSD and Napa WWTPs	15,308	3,772	8,802	12,574	2,657
	Total	27,655	4,944	11,279	16,193	10,689
Alternative 3: Fully Connected System	LGVSD, Novato, SVCSD, and Napa WWTPs	27,655	4,944	12,761	17,705	9,543
Total		27,655	4,944	12,761	17,705	9,543

¹ The number does not equal supply and demand due to evaporative and other losses (e.g. spreading).

SOURCES: CDM, 2009; ESA, 2009

A full description of the facilities proposed under each Action Alternative is provided in Section 2.8.

2.6.2 Phase 1 Implementation Plan

The Member Agencies have collectively prioritized the projects within their individual service areas to establish an Implementation Plan identifying the order in which projects would be constructed. Phase 1 of the Implementation Plan includes projects that are defined to a level of detail that allows for project-level environmental review. These projects are collectively referred to as Phase 1 Projects. The Phase 1 Projects are common to Alternatives 1, 2, and 3. This EIR/EIS may be relied upon by individual member agencies for approval of these individual Phase 1 Projects. **Table 2-3** identifies projects that would be implemented as Phase 1 Projects under any of the Action Alternatives considered. These projects will be examined at a project level of detail, and are described in Section 2.7, Project Level Analysis – Phase 1 Implementation Plan.

Figure 2-3 shows proposed facilities that would be implemented under Phase 1.

2.7 Project Level Analysis

2.7.1 Phase 1 Implementation Plan

The Member Agencies have collectively prioritized the projects within their individual service areas to identify a phased Implementation Plan under any of the alternatives being considered. The first phase of the Implementation Plan includes projects that each Member Agency has defined to a level of detail that allows for project-level environmental review. These projects are collectively referred to as Phase 1 Projects. This EIR/EIS may be relied upon by individual member agencies or other cooperating agencies for approval of these individual projects.

**TABLE 2-3
IMPLEMENTATION PLAN – PHASE 1**

		New Pipeline (miles)	New Demand (AFY)	Capacity Increase (mgd)	New Pumps (HP)	New Storage (AF)
LGVSD	Peacock Gap	--	--	--	--	--
	NMWD URWP (South)	5.9	204	0.7	72	⁽³⁾
	Sears Point	--	--	--	--	--
Novato SD	NMWD URWP (North/Central)	9.8	542	1.2	259	⁽³⁾
	Sears Point	--	--	--	--	--
SVCSD	Southern Sonoma Valley	--	--	--	--	--
	Central Sonoma Valley	--	--	--	--	--
	Sonoma Valley (1A) ¹	5.2	874	0	662	65
	Napa Salt Marsh	7.9	⁽²⁾	0	0	0
Napa SD	Carneros East	--	--	--	--	--
	MST Area	17.5	2,137	4.5	880	0
	Napa (local)	--	--	--	--	--
	Napa Salt Marsh	--	--	--	--	--
Total		46.3	3,757	6.4	1,873	65

¹ Sonoma Valley (1A) is a pipeline alignment originally analyzed as a part of the Sonoma Valley Recycled Water Project EIR and proposed under Phase 1 for the NBWRP. The alignment is described on page 2-18 of this document.

² Additional 3,460 AFY release of recycled water to Napa Salt Ponds 7 and 7A, depending upon year type. Because this is a beneficial use that is not related to recycled water supply, this number is tracked separately in each of the alternatives.

³ Existing 0.5 mg reservoir would be rehabilitated to provide recycled water system storage.

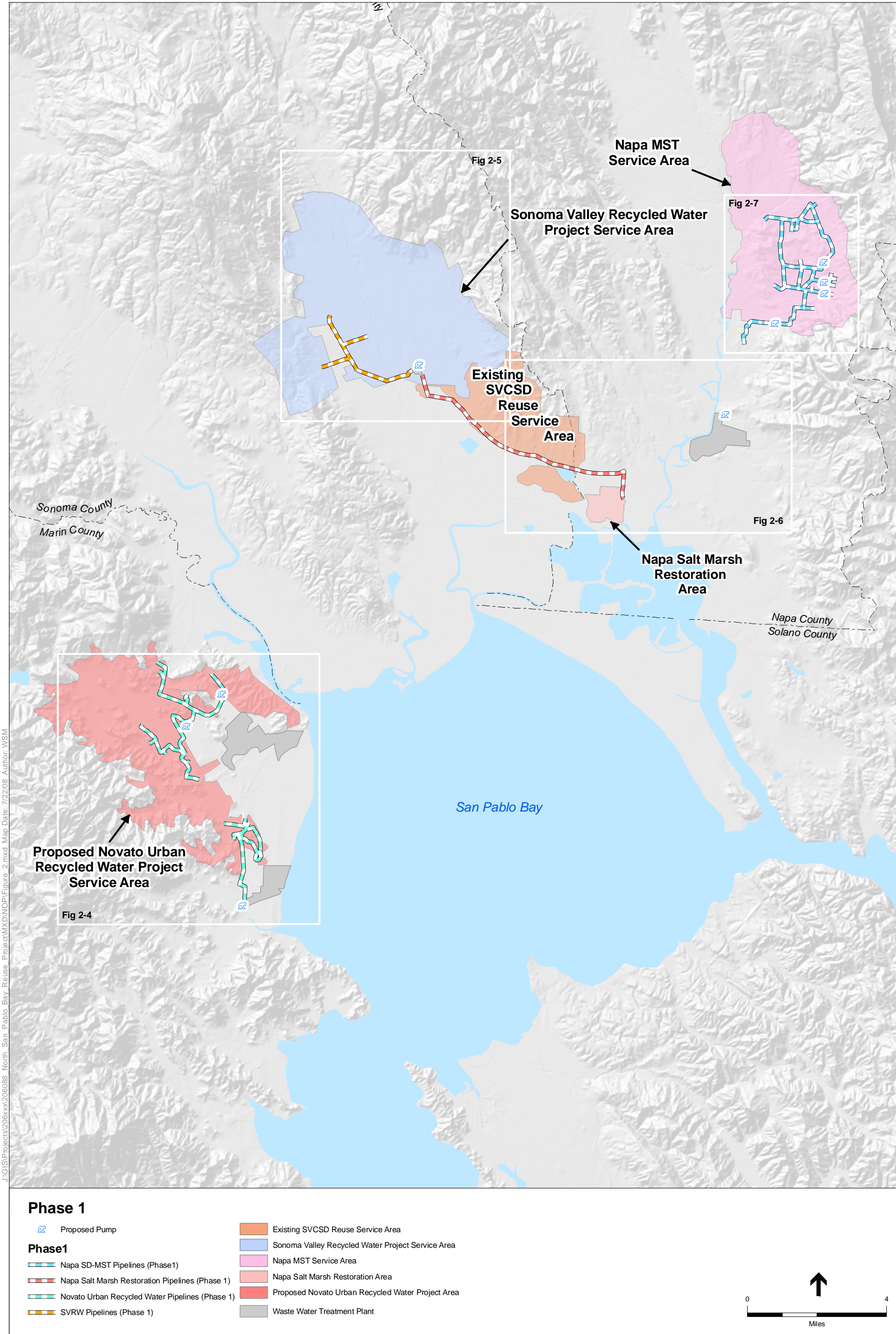
SOURCE: CDM, 2009, Napa SD, 2009.

Las Gallinas Valley Sanitary District/North Marin Water District

In 2006, the *Recycled Water Implementation Plan* (Nute Engineering, 2006) was developed to provide guidance and phasing for a recycled water system to serve the City of Novato and Hamilton Field urban areas. The intent of the implementation plan was to identify projects that could be implemented cooperatively by NMWD, Novato SD, and LGVSD in the near future in order to offset peak seasonal potable water supply demands. The *Recycled Water Implementation Plan* identified 3 service areas and facilities to most efficiently provide recycled water service: Novato South, Novato Central and Novato North. Under the Phase 1 Implementation Plan, service to the Novato South area would be provided by NMWD through construction of a pipeline distribution system. This system would be served by LGVSD through construction of a 0.7 mgd tertiary treatment facility at the existing LGVSD plant. This system would not be connected to the remainder of the NMWD recycled water system (Nute Engineering, 2006).

Novato South Service Area – Hamilton Field

Service to the Hamilton Field area would be established through implementation of a 0.7 mgd tertiary treatment upgrade at the existing LGVSD WWTP, construction of a new booster pump station onsite, and construction by NMWD of a pipeline distribution system from the LGVSD WWTP north to serve the Hamilton Field area (**Figure 2-4**). This system would consist of a loop of 6-inch pipeline along South Oakwood Drive and Casa Grande Drive, a 12-inch pipe along



SOURCE: CDM, 2008; ESRI, 2006; and ESA, 2008

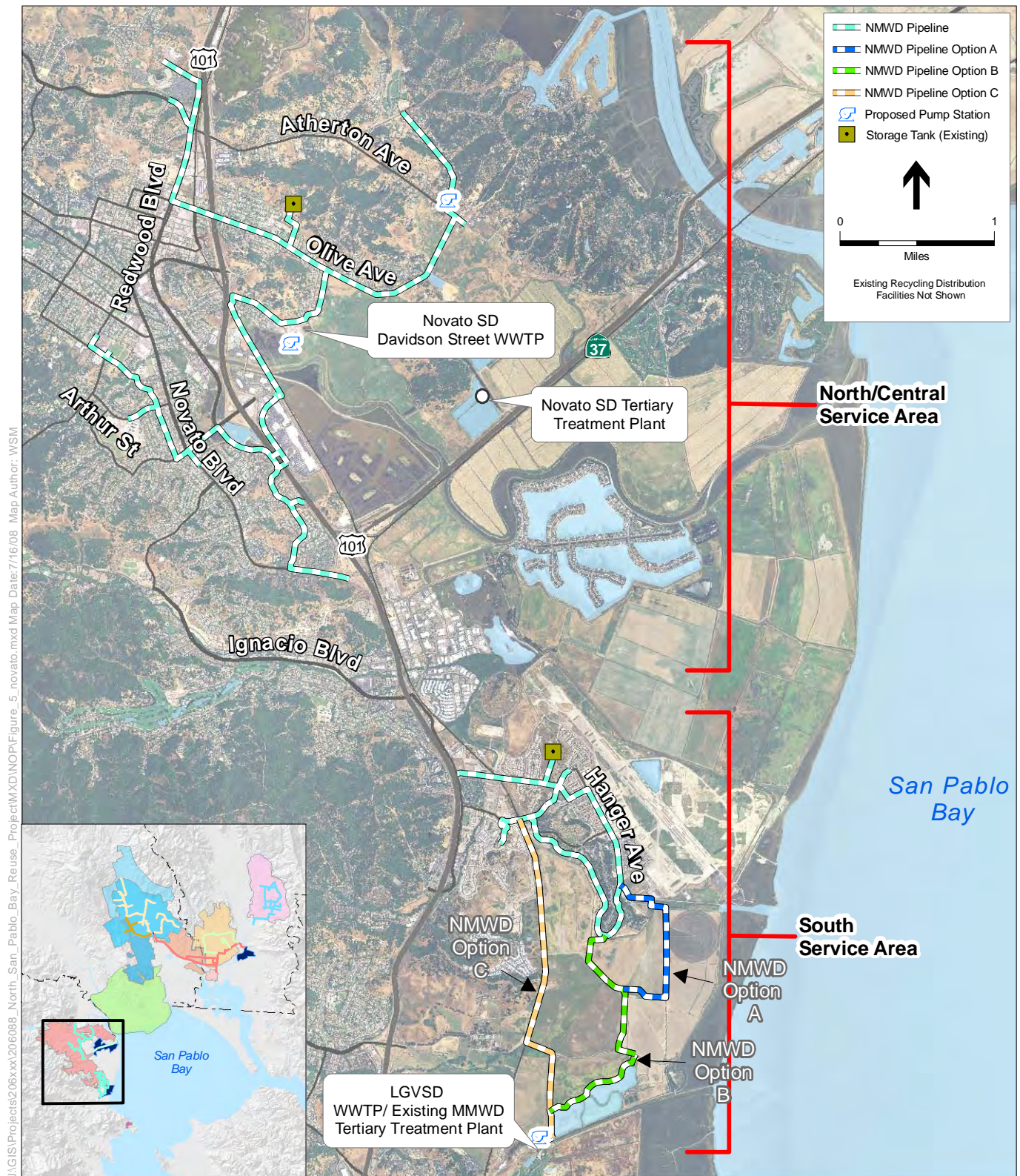
Note: Existing Water Distribution Facilities Not Shown

NBWRA North Bay Water Recycling Program. 206088.01

Figure 2-3

Phase 1 Implementation Plan
Service Areas and Facilities

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SOURCE: USDA, 2005; CDM, 2008; and ESA, 2008

Note: Existing Tank Facilities Shown

NBWA North Bay Water Recycling Program. 206088.01

Figure 2-4

Novato Service Area:
Phase 1 Projects

Hangar Avenue to South Palm Drive, and a 10-inch pipe on Palm Drive. Recycled water storage would be provided by retrofit of the existing 0.5-million gallon (MG) Reservoir Hill Tank.

To provide the additional 0.7 mgd treatment capacity, tertiary facilities would be constructed within the fenceline of the existing LGVSD WWTP, as shown in **Figure 2-4A**. NMWD would construct a pipeline from the LGVSD WWTP to the Hamilton Field area along three route options (Figure 2-4):

- **Option A:** This option would consist of approximately 2.75 miles of pipeline that would originate at the LGVSD WWTP, extend east adjacent to the WWTP ponds and northeast through grazing land to Hangar Avenue in the where it would connect to the Coast Guard Housing Distribution Loop.
- **Option B:** This option would consist of approximately 2.1 miles of pipeline that would originate at LGVSD WWTP, extend east adjacent to the WWTP ponds and north along agricultural access roads through grazing land. Option B would connect to the Coast Guard Housing Distribution Loop at Las Lomas Drive.
- **Option C:** This option would consist of approximately 2.15 miles of pipeline that would extend north from LGVSD WWTP through grazing land. The alignment would turn west along St. Vincent's Drive then north, adjacent to the Northwest Pacific Railroad (NWPRR) right-of-way. Option C would connect to the Coast Guard Housing Loop at Palm Drive.

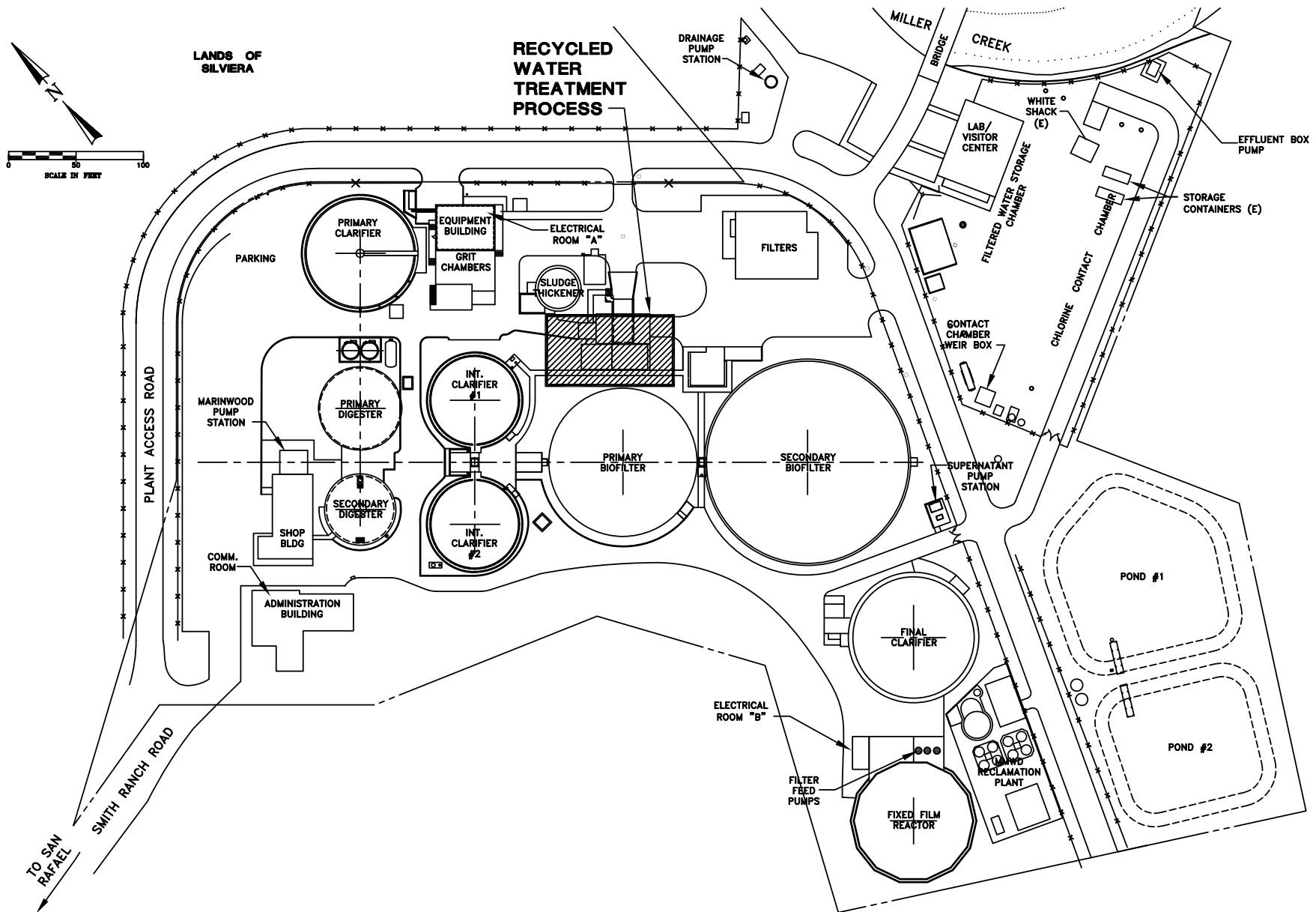
Novato Sanitary District/ North Marin Water District

Novato North Service Area

Under the *Recycled Water System Expansion Project*, NMWD and Novato SD would implement service in the Novato North Service Area by incrementally expanding tertiary capacity at the existing Novato Recycled Water Treatment Facility from 0.5 mgd to 1.2 mgd. The Recycled Water Treatment Facility 0.5 mgd upgrade would involve a new modular filter and expansion of the chlorination system. The recycled water pipeline would be routed from Atherton Avenue to Olive Avenue under Highway 101, and north on Redwood Boulevard to San Marin Drive (see Figure 2-4). A separate pipeline would be routed on H Lane to serve the Valley Memorial Park Cemetery. A booster pump would be installed at Atherton Avenue and the distribution system would be connected to the existing 0.5-MG Plum Street Tank, which would be rehabilitated to provide diurnal storage (Nute Engineering, 2006).

Novato Central Service Area

Under the *Recycled Water System Expansion Project*, Novato SD and NMWD would implement service in the Novato Central Service Area through construction of a recycled water distribution system from the Novato SD WWTP south to Rowland Boulevard and the Vintage Oaks shopping center, and across Highway 101 to serve urban users west of Highway 101. The treatment facilities at the Recycled Water Treatment Facility (see **Figure 2-4B**) would be decommissioned and relocated to the Novato SD WWTP. Tertiary treatment facilities are included in the Novato SD Master Plan for the WWTP. From the WWTP, an 18-inch pipeline would be installed along Novato SD's existing easement, with a jack and bore crossing of US 101 from Rowland



SOURCE: Nute Engineering, 2008

NBWRA North Bay Water Recycling Program. 206088

Figure 2-4A
LGVSD Tertiary Treatment Plan Upgrades

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SOURCE: GlobeXplorer, 2007

NBWRA North Bay Water Recycling Program. 206088.01

Figure 2.4B
Novato San District Recycled Water
Treatment Facility

Boulevard to Redwood Boulevard. An 18-inch recycled trunk line would then extend north through Novato to deliver recycled water to Novato High School and other irrigated playing fields, with a 10-inch line extending south along Redwood Boulevard (see Figure 2-4).

A new pipeline would connect the WWTP with the North Service Area pipeline in Olive Drive via Lea Drive or McClelland Drive. This would allow continuation of recycled water service to the Stone Tree Golf Course and the other customers in the North Service Area during the course of the relocation of the recycled water facility to the WWTP. This intertie would also incorporate the Plum Street Tank into the distribution system serving both the Novato North and Central Service Areas (Nute Engineering, 2006). **Table 2-4** summarizes the roadways that would be affected under this project.

TABLE 2-4
NMWD/NOVATO SD FACILITIES – MAJOR ROADWAYS AFFECTED

• Atherton Avenue	• Redwood Boulevard	• Novato Boulevard
• Olive Avenue	• DeLong/ Diablo Avenue	• S. Novato Boulevard
• Rowland Boulevard	• Arthur Street	• Hill Road

Sonoma Valley County Sanitation District

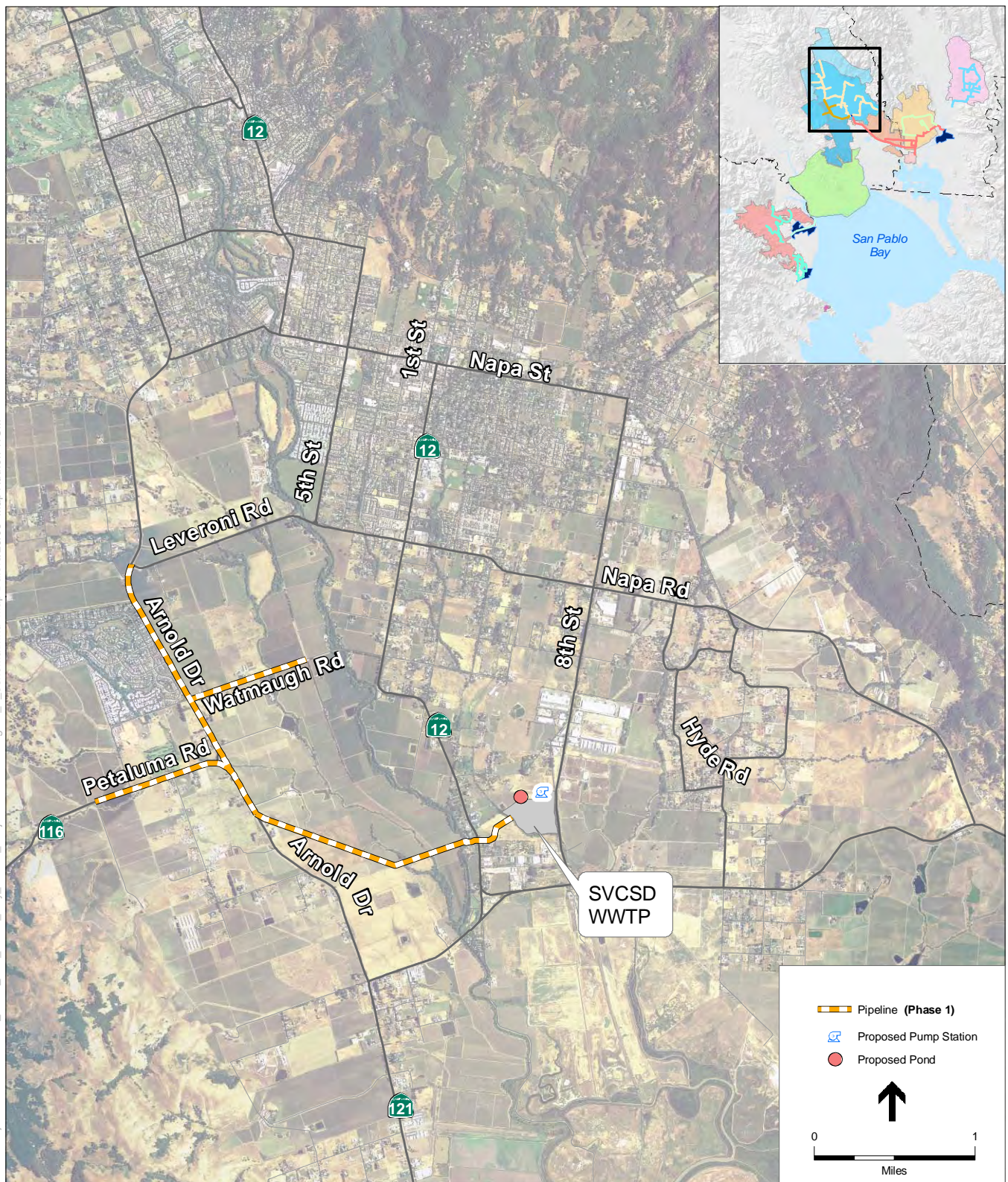
Sonoma Valley Recycled Water Project (SVRWP)

SVCSD completed an EIR in 2006 for the SVRWP, located in southern Sonoma Valley, including the City of Sonoma and unincorporated portions of the county. The SVRWP, as described in the EIR, involved extending the recycled water pipelines from the SVCSD WWTP to deliver recycled water to increased numbers of property owners. It was anticipated that if fully constructed, the SVRWP could provide up to approximately 2,750 AF per year of recycled water and expand the acreage currently irrigated with reclaimed water from 3,600 acres to approximately 9,100 acres. The SVRWP EIR included project-level analysis of 34 miles of pipeline, construction of operational and capacity storage reservoirs adjacent to the SVCSD WWTP, and construction of one booster pump station and one distribution pump station. The EIR also examined provision of additional pond storage within the Sonoma Valley at a program level. Although the SVRWP EIR was certified, SVCSD has elected to implement only one of the proposed pipeline alignments.

The Phase 1 Implementation Plan includes specific elements of the SVRWP, including construction of 5.2 miles of pipeline, additional storage at the SVCSD WWTP and construction of additional pumping capacity for distribution. These facilities are consistent with those analyzed in the SVRWP EIR. The EIR was certified in December 2006 by the SVCSD Board of Directors.

- The facilities proposed under the Phase 1 Implementation Plan are shown in **Figure 2-5**. SVRWP Alignment 1A would consist of approximately 5.2 miles of pipeline in western Sonoma Valley. The main pipeline would originate from the SVCSD WWTP, extend southwest and then northwest through a vineyard to Arnold Drive. The pipeline would continue north along Arnold Drive to Orange Avenue, and extend north on Orange Avenue

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SOURCE: USDA, 2005; CDM, 2008; and ESA, 2008

Note: Existing Facilities Not Shown

NBWA North Bay Water Recycling Program. 206088.01

Figure 2-5
Sonoma Valley Recycled Water Project Area
Phase 1 Projects

to Elm Avenue. The pipeline would then continue east on Elm Avenue, cross a field to Arnold Drive, extend north on Arnold Drive, and end just north of Leveroni Road. Secondary pipelines or segments would extend from the main pipeline on the following roadways: Highway 116, Watmaugh Road, and Leveroni Road.

Major roadways affected are identified in **Table 2-5**.

TABLE 2-5
SONOMA VALLEY RECYCLED WATER PROJECT –
MAJOR ROADWAYS AFFECTED

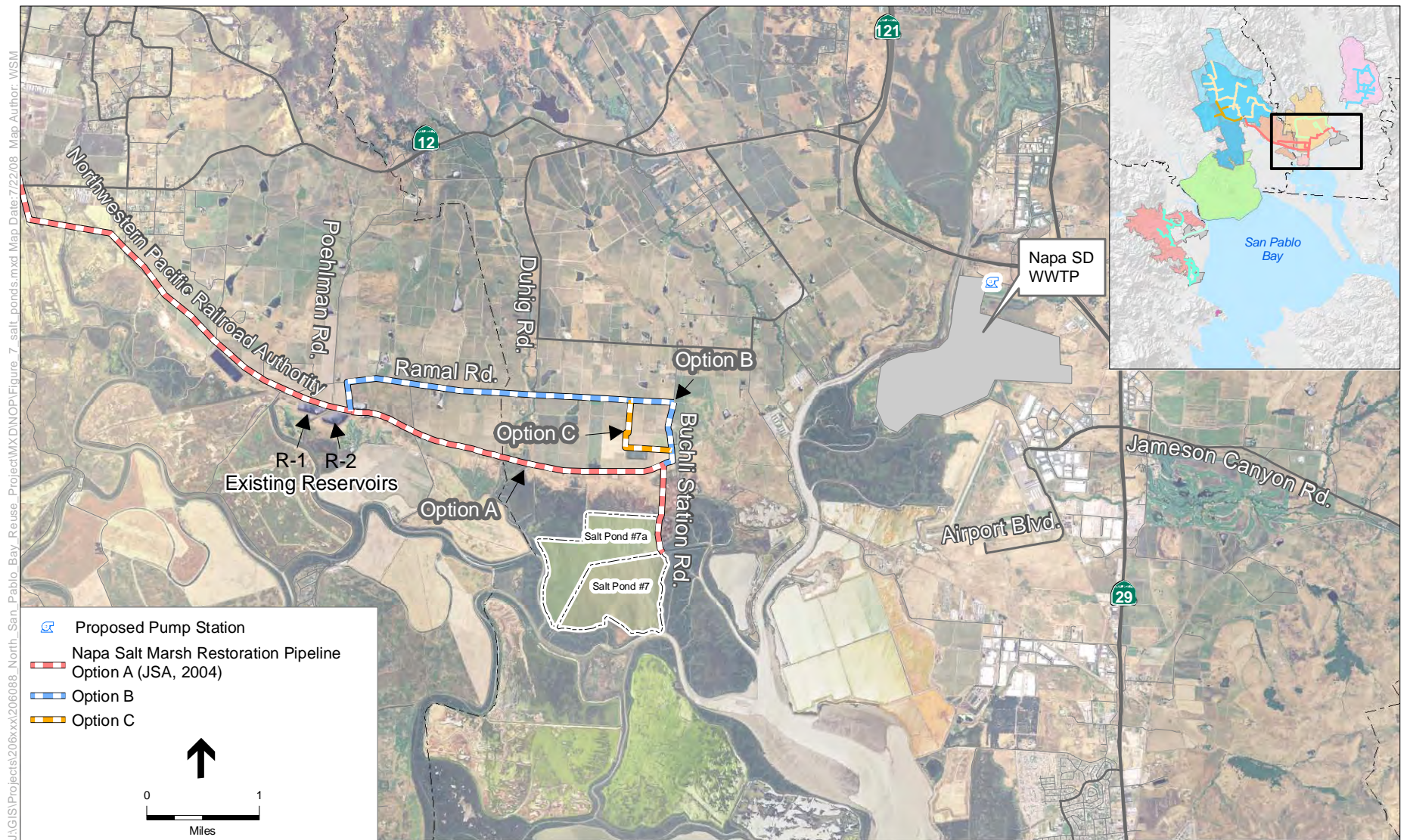
• Highway 116 (Stage Gulch Road)	• Broadway
• Arnold Drive (Orange Avenue)	• Petaluma Avenue
• Leveroni Road	• Grove Street
• W. Watmaugh Road	• Elm Avenue

SVCS D Napa Salt Pond Pipeline

The California Coastal Conservancy, U.S. Army Corps of Engineers, and California Department of Fish and Game have proposed and are implementing a salinity reduction and habitat restoration project for the 9,460-acre Napa River Unit of the Napa-Sonoma Marshes Wildlife Area. The Napa River Unit is located at the northeast edge of San Pablo Bay, adjacent to the Napa River. The purpose of the Napa River Salt Marsh Restoration Project, which was examined in an EIR/EIS that was approved in June 2004, is to restore a mosaic of habitats, including tidal habitats and managed ponds, and provide for better management of ponds in the Napa River Unit to support populations of fish and wildlife. An EIR/EIS was prepared and approved in June 2004. The Water Delivery Option examined as Phase 1 in the EIR/EIS at the project level includes the annual delivery of approximately 2,000 to 3,000 AF of tertiary recycled water from the SVCS D as an ongoing supply of non-saline water for restoration, with subsequent agricultural use.

Under Phase 1 of the NBWRP, SVCS D would construct a pipeline to provide recycled water to Pond 7 and 7A for habitat enhancement. Proposed facilities under the NBWRP's Phase 1 Implementation Plan include construction of a new pipeline from the existing SVCS D WWTP to the existing SVCS D storage reservoirs located near the intersection of the Northwestern Pacific Railroad Authority (NWPRA) and Ramal Road. Pumping would be provided by new pumps at the WWTP. The associated pipeline would include replacement of approximately 0.6 miles of aging pipe between the SVCS D WWTP and a junction structure along the NWPRA railroad line, and extending an 18-inch pipeline approximately 3.2 miles parallel to the existing 18-inch pipeline between the junction structure and the existing storage reservoirs. From the existing storage reservoirs, a new pipeline would be constructed approximately 4.0 miles (Option A) or 4.5 miles (Option B and C) to the existing salt pond mixing chamber (**Figure 2-6**). SCWA has identified three potential route options, which are described below.

- **Option A:** This option consists of installation of approximately 4.0 miles of 24-inch pipeline that would be installed from the reservoirs to Pond 7 and 7A. Approximately 1.0 mile of pipeline would extend from the reservoirs along the south side of NWPRA



SOURCE: USDA, 2005; CDM, 2008; and ESA, 2008

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Figure 2-6
 SVCSD Napa Salt Pond Pipeline
 Phase 1 Project

railroad tracks to Skaggs Island Road, at which point the pipeline would cross to the south side of the railroad tracks and continue east along the south side of the railroad tracks for approximately 0.4 miles. At this point, the pipeline would cross to the north side of the railroad tracks and continue east along the north side of the railroad for approximately 0.9 miles, then cross to the south side of the railroad tracks. The pipeline would extend 1.7 miles until it reaches the access road for Ponds 7 and 7A, which includes pipeline installation south along the access road for approximately 4,200 feet, terminating at the mixing chamber. This option is consistent with the pipeline route reviewed in the Napa River Salt Marsh Restoration Project EIR/EIS (JSA, 2004).

- **Option B:** This option consists of installation of 4.5 miles of a 24-inch pipeline from the reservoirs to the salt ponds. Approximately 0.25 miles of pipeline would be installed north along an access road to Ramal Road. The alignment would then extend 1.75 miles east along Ramal Road. At this point, the pipeline would transverse east along an agricultural access road for approximately 1.25 miles until it reaches Buchli Station Road. The pipeline would then run south on Buchli Station Road for approximately 1.25 miles, until it reaches the Huichica Creek entrance of the Napa-Sonoma Marshes Wildlife Area (NSMWA) and the access road for Ponds 7 and 7A.
- **Option C:** This option would consist of 4.7 miles, and would follow the above Option B route for approximately 3.0 miles (from the reservoir, east along the access road to Ramal Road, and along Ramal Road). However, the pipeline would then extend south approximately 0.3 miles to access an existing reservoir. At this point it would transverse 0.4 miles east to Buchli Station Road (Figure 2-6). The pipeline would run south on Buchli Station Road for approximately 1.0 mile, until it reaches the Huichica Creek entrance of the Napa-Sonoma Marshes Wildlife Area (NSMWA) and the access road for Ponds 7 and 7A.

Proposed facilities are shown in Figure 2-6. Major roadways affected are summarized in **Table 2-6**.

TABLE 2-6
NAPA SALT POND RESTORATION PIPELINES – MAJOR ROADWAYS AFFECTED

• Green Island Road	• Las Amigas Road
• Milton Road	• Buchlis Station Road
• Ramal Road	

Phase 1 would provide 889 AF of potable surface water offset: 147 AF in the Sonoma Valley Recycled Water Project, and 542 AF in the NMWD Urban Reuse Area, and 200 AF in Napa SD. This represents drinking water that will no longer be used for non-potable uses, thus ensuring the highest quality water is reserved for potable uses.

Napa Sanitation District

The *Recycled Water Expansion, Hydraulic and Preliminary Engineering Analysis, Phase 1 Report MST Area* (Brown and Caldwell, May 2007) provides a recycled water distribution system to address groundwater overdraft in the MST area of Napa County.

MST Area Project

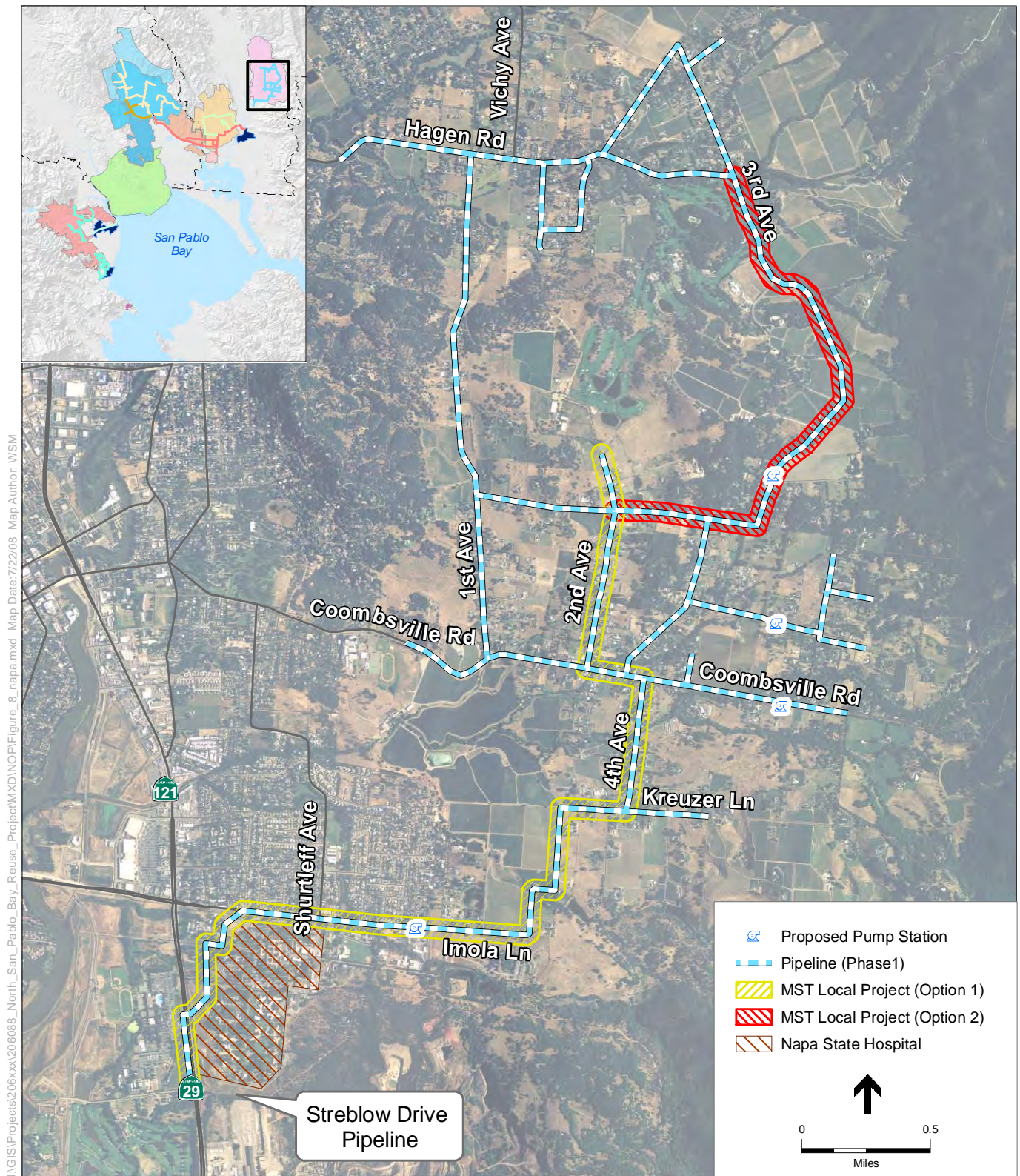
The MST Area Project would consist of 17.5 miles of new pipeline, four booster pump stations along the pipeline routes, and a new booster pump at the WWTP. The new pipeline would be installed from the end of the Streblow Drive pipeline through the Napa State Hospital grounds and north to the MST area (see **Figure 2-7**). A looped system using existing roadways would be constructed, with one segment extending west along First Avenue and the second segment extending east along Third Avenue; both segments would then merge along Hagen Road north of the Napa Valley Country Club. Four booster pump stations would be installed to maintain pressure throughout the distribution system, and an additional pump would be installed at the WWTP. Pump stations would be located on Imola, Wild Horse Valley Road, East 3rd Avenue, and 3rd Avenue. Potential recycled water users include the Napa State Hospital, the Napa Valley Country Club, and agricultural and residential parcels along the proposed pipeline route. Major roadways that would be affected by pipeline installation are listed in **Table 2-7**.

TABLE 2-7
NAPA SD MST PIPELINE SYSTEM – MAJOR ROADWAYS AFFECTED

• Imola Avenue	• Second Avenue
• 4th Avenue	• Third Avenue
• Kreuzer Lane	• East 3rd Avenue
• Coombsville Road	• North Avenue
• Wild Horse Valley Road	• Olive Hill Lane
• First Avenue	• Loma Heights Road
• North 3rd Avenue	• Hagen Road

Implementation of service to the MST area would require expansion of the Napa SD WWTP's tertiary treatment capacity by 4.5 mgd. This would include expansion of the filtration system by installing parallel filter cells adjacent to the existing filter building at the Napa SD WWTP. The location of the existing and proposed filter facilities within the fence line of the existing WWTP is shown in **Figure 2-8**. No additional storage facilities would be required.

Under the MST Local Project, a more direct pipeline system extending north from Imola Avenue along 4th Avenue, Coombsville Road, and 2nd Avenue, terminating at the Napa Valley Country Club would be implemented. The MST Local Project includes two options: Option 1 would include installation of approximately 3.5 miles of pipeline, and one pump station. Option 2 would extend the pipeline an additional 2.2 miles to provide an alternate route to the County Club. These facilities are inclusive of those identified for the larger Phase 1 MST Project; as such, analysis of these facilities is included in the discussion of impacts relative to the Phase 1 MST Project.

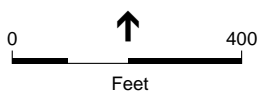


SOURCE: USDA, 2005; CDM, 2008; and ESA, 2008

Note: Existing Facilities Not Shown

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Figure 2-7
Napa SD MST Area:
Phase 1 Projects



SOURCE: GlobeXplorer

North Bay Water Reuse Authority . 206088

Figure 2-8
Napa MST Area - Soscol WWTP Tertiary
Filtration System Upgrade - Proposed Facilities

2.8 Action Alternatives

2.8.1 No Project Alternative

The No Project Alternative assumes that the proposed project is not implemented, and reviews two scenarios: 1) consideration of existing conditions without the project, a “no build scenario”; and 2) consideration of “reasonably foreseeable” future conditions without the project. This second scenario is identical to the No Action Alternative, identified below, and will be examined under that heading.

2.8.2 No Action Alternative

Analysis of a No Action Alternative provides decision makers with a benchmark against which to compare the magnitude of environmental effects of the action alternatives. The No Action Alternative represents a “future-without-project” scenario: a continuation of existing conditions for an estimation of the most reasonable future conditions that could occur without implementation of any action alternatives.

The “No Action Alternative” assumes that there would be no joint project among the member agencies. It represents the “current status” in which additional wastewater treatment capacity and water recycling occurs strictly from the implementation of local plans for expansion, and the potential need to develop additional potable water supplies continues to be a regional challenge. In general, each Member Agency would continue to implement individual recycling projects, subject to the availability of funding and completion of the CEQA process. The No Action Alternative would likely result in a smaller increment of water recycling projects within the region. For example, it is anticipated that SVCSD would implement only one of the four pipeline systems identified in the Sonoma Valley Recycled Water Master Plan EIR, based upon the ability to fund such construction. Similarly, it is anticipated that LGVSD and Napa SD would prioritize funding toward NPDES compliance, and would not implement recycled water projects. Additionally, the lack of federal funding may delay or preclude the implementation of individual planned projects, due to the need to increase user rates in order to provide funds for implementation. Specific projects that would have the greatest potential to be implemented under the No Action Alternative are below, and are shown in Figure 2-8:

- **LGVSD.** LGVSD would prioritize expenditures on projects that meet its NPDES permit requirements. For the purpose of this EIR/EIS, it is assumed that this strategy would result in no additional recycled water projects being implemented in the LGVSD service area.
- **Novato SD.** Novato SD and NMWD would pursue implementation of recycled water distribution facilities solely within the Novato North Service Area. This includes 4.4 miles of pipeline, a 0.5 mgd upgrade at the Recycled Water Treatment Facility, and one pump station at the intersection of Atherton and Olive.
- **SVCSD. Sonoma Valley Recycled Water Project – Alignment 1A:** This would include construction of approximately 5.2 miles of pipeline in the Sonoma Valley, with completion of a pump station at the SVCSD WWTP.

- **SVCSD. Napa Salt Pond Pipeline:** This would include construction of approximately 3.8 miles of pipeline from the SVCSD WWTP to the SVCSD storage ponds located near the intersection of Northwestern Pacific Railroad and Ramal Road. From the ponds an additional 4.5 miles of new pipeline would be constructed to convey water to the salt pond mixing chamber. The pipeline and the pump station were discussed and analyzed under the Napa River Salt Marsh Restoration Project EIR/EIS (JSA, 2004) under the Water Delivery Project Component (Sonoma Pipeline) (see Figure 2-6). Potential route options would extend east along Ramal Road and south along Duhlig Road toward the ponds.
- **Napa SD.** Napa SD would prioritize expenditures on projects that meet its NPDES permit requirements. For the purpose of this EIR/EIS, it is assumed that this strategy would result in no additional recycled water projects being implemented in the Napa SD service area.

Facilities that would likely be implemented under the No Action Alternative are summarized in **Table 2-8**, and are shown in **Figure 2-9**. Planned treatment capacity levels are summarized in **Table 2-9** for each WWTP.

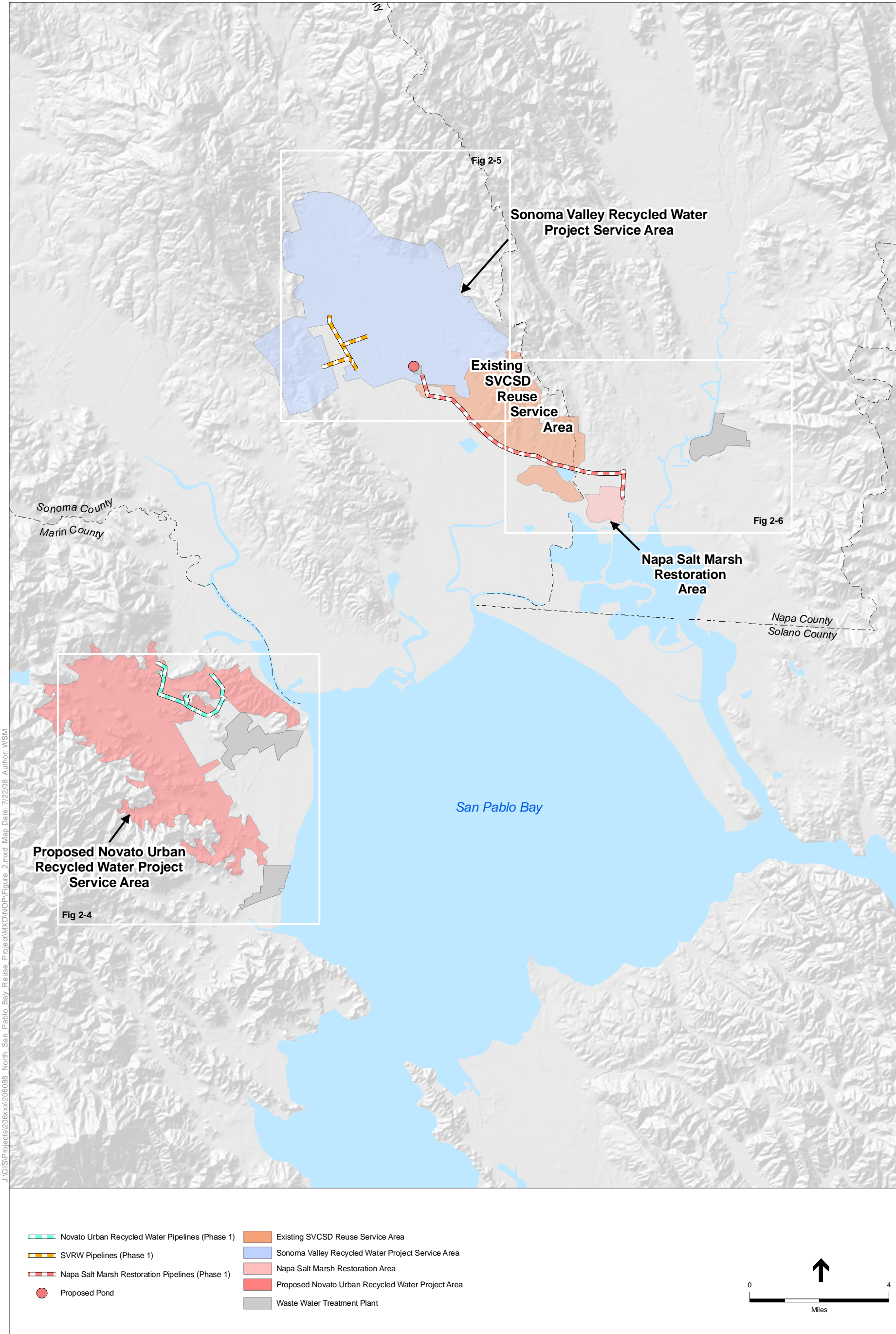
TABLE 2-8
NO ACTION ALTERNATIVE SUMMARY – FACILITIES BY MEMBER AGENCY

No Action		New Pipeline (miles)	New Demand (AFY)	Treatment Capacity Increase (mdg)	New Pump Station (HP)	New Storage (AF)
LGVSD	Peacock Gap	--	--	--	--	--
	NMWD URWP (South)	--	--	--	--	--
	Sears Point	--	--	--	--	--
Novato SD	NMWD URWP (North/Central)	4.4	193	0.5	250	x
	Sears Point	--	--	--	--	--
SVCSD	Southern Sonoma Valley	--	--	--	--	--
	Central Sonoma Valley	--	--	--	--	--
	Sonoma Valley (1A)	5.2	874	--	662	65
	Napa Salt Marsh ¹	7.9	--	--	--	--
Napa SD	Carneros East	--	--	--	--	--
	MST Area	--	--	--	--	--
	Napa (local)	--	--	--	--	--
	Napa Salt Marsh	--	--	--	--	--
Total		17.5	1,067	0.5	912	65¹

¹ Potential for 3,460 AFY release of recycled water to Napa Salt Ponds 7 and 7A, depending upon year type. Because this is a beneficial use that is not related to water supply, this number is tracked separately in each of the alternatives.

² The total only represents new storage. The Proposed Action will rely on existing storage and retrofit existing facilities to accommodate storage needs, as identified in the Phase 3 Feasibility Report (CDM, 2008).

SOURCE: CDM, 2009.



SOURCE: CDM, 2008; ESRI, 2006; and ESA, 2008

Note: Existing Water Distribution Facilities Not Shown

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Figure 2-9
No Action Alternative
Future Without the Project

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