

CHAPTER 2

Project Description

2.1 Project Background

The North Bay Water Reuse Program (NBWRP) has been developed in conformance with the requirements of the Bureau of Reclamation’s Public Law 102-575, Title XVI, including preparation of a Feasibility Study, and passage of Senate Bill 1475. The U.S. Department of Interior, Bureau of Reclamation (Reclamation) and North Bay Water Reuse Authority’s (NBWRA) Member Agencies prepared the Draft Environmental Impact Report/Environmental Impact Statement (Draft EIR/EIS) for Phase 2 of the NBWRP (NBWRP Phase 2 or Phase 2 Program). The document is a joint EIR/EIS and satisfies the requirements of the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA).

The NBWRA, originally established under a Memorandum of Understanding (MOU) in August 2005 and most recently amended November 2017, is comprised of 11 wastewater and potable water utilities as Member Agencies (see **Figure 1**) – the Las Gallinas Valley Sanitary District (LGVSD), the Novato Sanitary District (Novato SD), the Sonoma Valley County Sanitation District (SVCSD), the Napa Sanitation District (Napa SD), the North Marin Water District (NMWD), Napa County, Marin County, the Marin Municipal Water District (MMWD), the City of American Canyon, the City of Petaluma, and the Sonoma County Water Agency (SCWA). NBWRA Cooperating Agencies include the Central Marin Sanitation Agency (CMSA). The SCWA is also acting as the administrative agency.

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 Proposed Project Under Consideration

2.2.1 NBWRP Phase 2 Elements

NBWRP Phase 2 builds upon the NBWRA’s Phase 1 infrastructure investments, which included \$104 million in treatment, distribution, and storage projects to develop recycled water as part of the region’s water supply portfolio. Building on NBWRP Phase 1 technology and infrastructure investments, the NBWRP Phase 2 would deliver increased yield through expanded treatment,

new pipelines, and additional storage projects, while building resiliency into the region's long-term water supply through the use of recycled water. **Figure 2** shows the geographic relationship of the NBWRP Phase 2 projects with those implemented under Phase 1, as well as other existing facilities.

The NBWRA's Member Agencies have collectively prioritized the projects within their individual service areas to participate in the NBWRP Phase 2. These are projects that each Member Agency has defined to a level of detail that allows for project-level environmental review and are collectively referred to as the NBWRP Phase 2. This EIR/EIS will be relied upon by the individual Member Agencies for approval of each project under the Program. These projects are summarized in **Table 1** and shown on Figure 2.

Collectively, the NBWRP Phase 2 would provide 4,885 AF of new recycled water for beneficial use and would include: installation of 19.8 miles of new pipelines, construction of facilities onsite at the existing wastewater treatment plants (WWTPs) to provide an additional 4.87 million gallons per day (mgd) of tertiary treatment capacity, and development of approximately 10.1 AF of storage, primarily for agricultural use. As with the Phase 1 projects, Phase 2 elements would offset drinking water that would no longer be used for non-potable uses, thus ensuring the highest quality water is reserved for potable uses.

Table 1 identifies the projects under Napa SD jurisdiction in the shaded rows. The project elements under Napa SD jurisdiction are discussed in Section 2.2.2 below.

TABLE 1: NBWRP PHASE 2 ELEMENTS

Agency	Projects	Project Yield (AFY)	Distribution Pipelines (miles)	Pump Stations (hp)	New Storage (AF)	WWTP Treatment Upgrades (mgd)
Novato SD	RWF Treatment Capacity Expansion	286	--	--	--	0.85
	Marin County Lower Novato Creek Project 1 - Distribution	40	1.1	--	--	--
	Turnout to Wetlands	840	0.02	--	--	--
SVCSD	Napa Road Pipeline	200	2.2	--	--	--
MMWD¹	San Quentin Prison Recycled Water Distribution System	153	1.1	50	0.08	0.20
Napa SD	Increase Soscol WRF Filter Capacity	571	--	--	--	1.70
	Soscol WRF Covered Storage	240	0.1	--	10.0	--
Petaluma	Increase Ellis Creek WRF Capacity	712	--	--	--	2.12
	Urban Recycled Water Expansion	223	8.0	--	--	--
	Agricultural Recycled Water Expansion 1	813	1.3	--	--	--
	Agricultural Recycled Water Expansion 2	530	2.1	--	--	--
American Canyon	Recycled Water Distribution System Expansion 1	84	1.7	--	--	--
	Recycled Water Distribution System Expansion 2	25	2.0	--	--	--
	WRF Phase 2 Treatment Plant Upgrades	168	0.2	--	--	--
Total		4,885	19.8	50	10.1	4.87

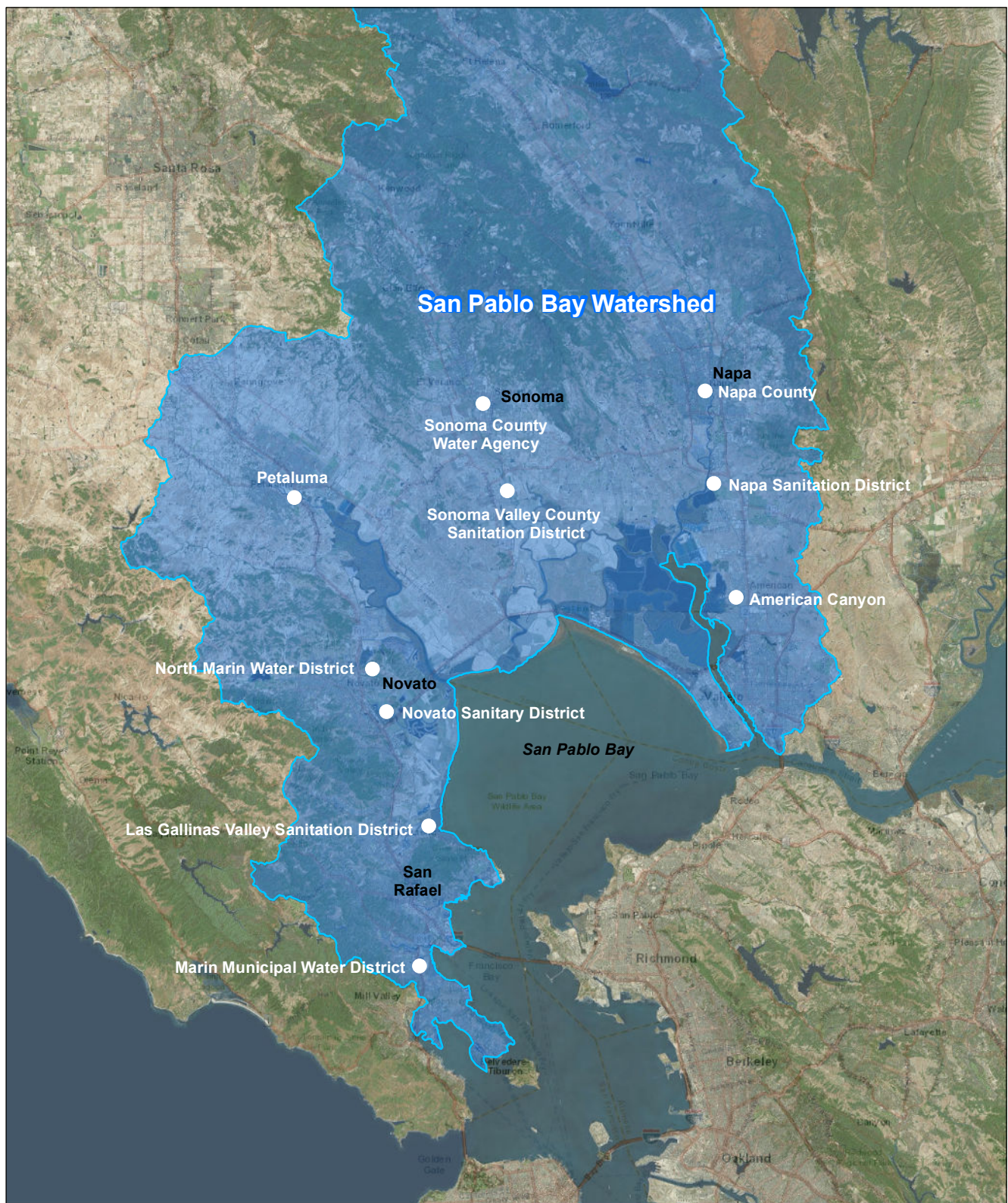
NOTES:

¹ 0.08 AF operational storage at CMSA WWTP
 RWF = Recycled Water Facility
 WRF = Water Reclamation Facility
 Ellis Creek WRF = Ellis Creek Water Reclamation Facility

AFY = Acre Feet Per Year
 HP = horsepower

AF = Acre Feet
 MGD = Million Gallons Per Day

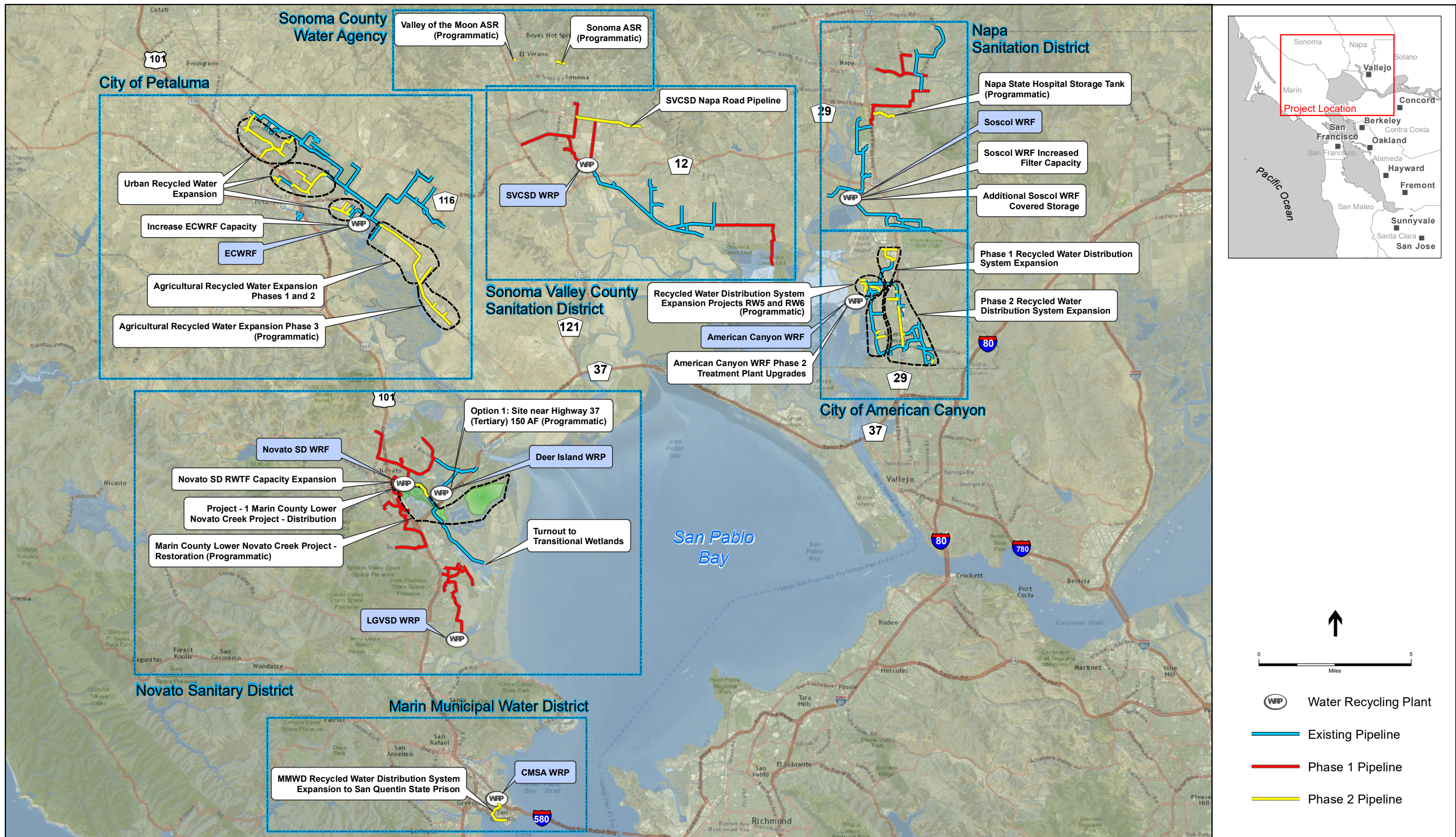
SOURCE: Brown and Caldwell, 2017, NBWRA, 2018.



SOURCE: North Bay Water Reuse Authority; Calwater 2.2.1

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Figure 1
NBWRP Member Agencies



2.2.2 Projects Considered for Approval by Napa SD

Soscol Water Recycling Facility Increased Filter Capacity

Soscol Water Recycling Facility Increased Filter Capacity. The Soscol Water Recycling Facility (WRF) Increased Filter Capacity project would include upgrades at the existing facility to increase tertiary treatment capacity by 1.7 mgd. Filter basins for two filters (comprised of 1,000 square feet of filter area) were constructed as part of the NBWRP Phase 1 Project, but only one filter (500 square feet of filter area) was installed at that time. This NBWRP Phase 2 project consists of installing the remaining filter and associated mechanical components in the existing empty filter basin and would occur within the bounds of the WRF, providing 571 AFY of recycled water based on 0.51 mgd of average annual production (**Figure 3**).

Soscol Water Recycling Facility Covered Storage

The project consists of constructing an operational storage pond at the Soscol WRF to store tertiary filtered and disinfected recycled water that would be used to meet daily peak customer demands. Similar to the existing recycled water operational storage ponds at the WRF, the new pond would have a lined high-density polyethylene (HDPE) bottom, HDPE-lined side slopes, and a cover. New pipeline would connect this pond to existing facilities. This project would be located within undeveloped areas currently owned by Napa SD, and would include a 12 AF storage pond within a 1.5-acre footprint, membrane liner, and cover, and approximately 600 LF of connecting pipeline. Two pond layout options – Options A and B – are shown in Figure 3. The project would yield 240 AFY by providing operational flexibility to store and deliver recycled water particularly in high demand summer irrigation periods.

2.2.3 Environmentally Superior Alternative – Proposed Action

Four alternatives were considered by the NBWRA for the provision of recycled water (No Project Alternative, No Action Alternative, Proposed Action, and Storage Alternative). The Proposed Action has been identified as the most environmentally, equitable, and financially sustainable alternative that will effectively fulfill the NBWRP Phase 2 objectives. The Proposed Action would provide adequate conveyance, pumping, and storage capacity that would result in 4,885 AFY of recycled water, thereby offsetting a substantial amount of potable demand and reducing wastewater discharge to San Pablo Bay. The Proposed Action would achieve all of the program objectives with least environmental impacts and costs, although it would not provide the benefits from increased storage provided under the Storage Alternative. The Proposed Action would have the capacity to provide recycled water to offset potable demand and improve water supply reliability.



SOURCE: North Bay Water Reuse Authority

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Figure 3
 Soscol Water Recycling Facility Increased Filter Capacity
 and Additional Covered Storage
 Options A and B

The Proposed Action would improve water supply reliability with a major emphasis on local water use. Water reuse would provide environmental benefits by offsetting surface and groundwater use, reducing the need to develop additional water supplies, and reducing discharge to the Bay. Although an incrementally smaller amount of recycled water would be available, it would represent an economically feasible alternative. Implementing the Proposed Action would cost 56 percent less than the Storage Alternative. Since the Proposed Action would represent the lower cost Action Alternative and would be implemented with federal and State funding support, it is the most cost-effective for the Member Agencies. The Proposed Action would require the least amount of new storage and rely on increasing treatment capacities at existing facilities and using ponds on existing WWTP sites.

Recycled Water Supply, Demand, and Discharge

Table 2 summarizes the existing and projected (2025) wastewater in flow, available recycled water, and recycled water supply resulting discharge that would occur under the NBWRP Phase 2 (Proposed Action).

TABLE 2
RECYCLED WATER SUPPLY, DEMAND, AND RESULTING DISCHARGE (AFY) – PHASE 2

WWTP Service Area	WWTP Inflow (2010)		Projected WWTP Inflow (2025)		Existing and Phase I Beneficial Reuse		2025 Supply Available for Phase 2		Proposed Phase 2 Recycled Water		Resulting 2025 Discharge to San Pablo Bay ¹	
	MG	AFY	MG	AFY	MG	AFY	MG	AFY	MG	AFY	MG	AFY
Novato SD	2,033	6,245	2,871	8,811	568	1,744	2,303	7,067	380	1,166	1,923	5,901
Petaluma	1,995	6,122	2,263	6,949	866	2,658	1,397	4,291	743	2,278	656	2,013
SVCS	1,324	4,063	1,665	5,110	1,088	3,339	577	1,772	65	200	512	1,572
Napa SD	3,100	9,513	3,945	12,107	948	2,911	2,997	9,197	260	810	2,733	8,387
CMSA ²	4,263	13,082	4,852	14,891	409	1,256	4,443	13,635	49	153	4,394	13,482
American Canyon	508	1,560	777	2,386	81	248	697	2,138	905	295	601	1,843
Total	13,223	40,585	16,373	50,254	3,960	12,156	12,414	38,100	2,402	4,902	10,819	33,198

NOTES:

¹ Resulting discharges based on Phase 2 recycled water use. The number does not equal supply and demand due to evaporative and other losses (e.g. spreading).

² Partnering with MMWD in the NBWRP Phase 2 project at San Quentin State Prison.

SOURCES: Brown and Caldwell, 2017

References

Brown and Caldwell, 2017. North Bay Water Reuse Program Phase 2 Feasibility Study. June.

North Bay Water Reuse Authority, 2018. North Bay Water Reuse Program Phase 2 Draft Environmental Impact Report/Draft Environmental Impact Statement, SCH No. 2017072051. Prepared by Environmental Science Associates. April.