WaterSMART

Title XVI Water Reclamation and Reuse Program Funding for Fiscal Year 2016

Funding Opportunity R16-FOA-DO-003

North Bay Water Reuse Program (NBWRP)

Marin, Napa, and Sonoma Counties, California

December 10, 2015

North Bay Water Reuse Authority
Sonoma County Water Agency (Administrative Agency for NBWRA)

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The NBWRA Phase 1 Program is authorized to receive $25 million in federal funding assistance provided under two Cooperative Agreements with Reclamation. The first, Cooperative Agreement R10AC20R87, provided $7,328,000 from ARRA and is now closed. The second, R14AC00018 (formerly R10AC20093) provides up to $17,672,000 of federal funding assistance from Title XVI.

This application is under R14AC00018 (formerly R10AC20093) that provides up to $17,672,000 of federal funding assistance.

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Sonoma County Water Agency, as administrative agency for the North Bay Water Reuse Authority, Santa Rosa, Sonoma County, California.

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North Bay Water Reuse Authority and North Bay Water Reuse Program

The North Bay Water Reuse Authority (NBWRA), established under a Memorandum of Understanding, is comprised of counties, cities, and local water and sanitation districts. Current members include the City of Petaluma, Las Gallinas Valley Sanitary District (LGVSD), Marin County, Marin Municipal Water District (MMWD), Napa County, Napa Sanitation District (Napa SD), North Marin Water District (NMWD), Novato Sanitary District (Novato SD), Sonoma County Water Agency (SCWA), and Sonoma Valley County Sanitation District (SVCSD). Additional information is available at the NBWRA webpage, http://nbwra.org.

In 2002, local water and wastewater agencies undertook a cooperative, watershed-based, regional planning effort that initiated the North Bay Water Reuse Program (NBWRP). The purpose of the NBWRP is to develop and provide high quality recycled water for agricultural, urban, and environmental uses and to expand the recycled water system throughout the greater program area (i.e., Marin, Sonoma, and Napa Counties). The NBWRP also reduces reliance on local and imported surface water and groundwater supplies and reduces the amount of treated effluent releases to San Pablo Bay and its tributaries.

In 2009, the NBWRA began implementing Phase 1 of its recycled water program, including construction of wastewater treatment plant upgrades, storage, pipelines, and pump stations to distribute recycled water for use in compliance with Article 4 in Title 22 of the California Code of Regulations. This grant application is anticipated to be the final request for project funding assistance under the Phase 1 authorization and when completed, Phase 1 projects will provide 3,757 acre-feet per year (AFY) of tertiary treated recycled water for irrigation demands and up to 1,700 AFY of tertiary treated recycled water for Napa Salt Marsh habitat restoration.

Technical Project Description

The technical project description should provide a brief summary of the authorized Title XVI project, or where there is more than one project sponsor the applicant's entire component of the authorized project. If a feasibility study for the project has been approved by Reclamation, information contained in the study may also be referenced here.

Overview of the North Bay Water Reuse Program

The North San Pablo Bay region of California's Napa, Sonoma, and Marin Counties faces serious long-term challenges in providing reliable water supplies. The area is not served by federal water projects, surface and groundwater sources are limited, and some local groundwater basins are over-drafted and are seeing an increase in salinity due to saltwater intrusion from the Bay. Urban and agricultural demands, exacerbated by low rainfall, exceed the region's ability to provide a reliable, sustainable, and economical water supply. A clean, dependable water supply is also needed to continue the environmental restoration of vital tidal wetlands at the base of the San Pablo Bay watershed. The effects of climate change are further stressing the area's water supplies resulting in reduced diversions from the Russian River, unpredictable rainfall, and fluctuating temperatures that impact agriculture and aquatic habitats.

The region's wastewater treatment agencies have long faced strict limits on the timing and quality of treated effluent they can send to San Pablo Bay. By treating wastewater to the strict levels required for reuse, these agencies can develop recycled water to augment local water supply and in turn help protect limited potable water resources.

The NBWRA is a cooperative program that builds regional water supply resiliency for all water users by expanding the use of 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. The NBWRP's projects provide new, long-term local water supplies that also offer numerous economic and environmental benefits for the region, including:

- A reliable, new water supply for the region's agriculture;
- An alternative water supply for irrigation of parks, golf courses, and public landscaping;
- Increased water for restoration of wetlands and improved in-stream flows for riparian habitat and fisheries recovery;
- Reduced demand on limited local surface and groundwater supplies;
- Less discharge of treated wastewater into San Pablo Bay;
- Reduced demand on potable water imported from the Russian River; and
- Leveraged, cooperative funding opportunities through regional agency partnering.

Each of the NBWRA wastewater agencies have recycled water programs, and through partnering with other NBWRP agencies, new recycled water customers can be served throughout the Program area.

To date Reclamation has obligated 81 percent of the $25 million in federal funds authorized in P.L. 111-11 Section 9110 for Phase 1 of the NBWRP and the remaining projects are being prepared for final design and construction. Phase 1 is comprised of six recycled water

distribution system projects managed by the individual NBWRA member agencies. When complete, Phase 1 will provide 3,757 AFY of tertiary treated recycled water to the North Bay region for irrigation demands. In addition, up to 1,700 AFY of tertiary treated recycled water will be released to Napa Salt Marsh for habitat restoration.

The member agencies collectively prioritized the projects within their individual service areas to establish the set of Phase 1 projects. The NBWRP Phase 1 recycled water distribution system projects in Marin, Sonoma, and Napa Counties are shown in Figure 1 and summarized below.

- **Novato South Service Area.** LGVSD constructed a new 0.7 million gallon per day (mgd) tertiary treatment plant which will serve 204 AFY of landscape irrigation and other approved uses to the Hamilton Field area in the Novato South Service Area. NMWD completed 8.2 miles of new pipelines from the LGVSD plant and rehabilitated a 500,000-gallon storage tank for distribution of the recycled water. LGVSD will design and construct an expansion to its tertiary treatment plant to increase capacity to 5.4 mgd.
- **Novato North Service Area.** NMWD and Novato SD implemented service in the Novato North Service Area by expanding tertiary capacity at the existing Novato Recycled Water Treatment Facility from 0.5 mgd to 1.2 mgd. The project included 4.6 miles of new recycled water distribution pipelines, a booster pump, and rehabilitation of an existing 500,000-gallon storage tank.
- **Novato Central Service Area.** Novato SD and NMWD will implement service in the Novato Central Service Area through relocation of a Recycled Water Treatment Facility to the Novato SD wastewater treatment plant (WWTP) and construction of a recycled water distribution system serving users south of the WWTP.
- **Sonoma Valley Recycled Water Project.** SVCSD constructed 1.0 mile of 18-inch and approximately 730-feet of 10-inch pipelines, a 100-AF recycled water reservoir at the SVCSD WWTP, and designed a new pump station at the SVCSD WWTP. In addition, SVCSD has designed 1.5 miles of 10-inch pipeline to serve urban users recycled water which will supply approximately 70 acre-feet of recycled water annually.
- **Napa Sonoma Salt Marsh Project.** SVCSD constructed 3.5 miles of pipeline to bring tertiary treated recycled water to two ponds in the Napa-Sonoma Marshes Wildlife Area. This pipeline will provide up to 1,700 AFY for habitat restoration of the saline ponds.
- **Milliken-Sarco-Tulocay (MST) Project.** Napa SD and Napa County are working together to extend Napa SD's recycled water pipeline from the WWTP to Napa State Hospital and further into the MST area to provide up to 2,137 AFY (at full build-out) for landscaping and irrigation purposes. The project consists of new pipeline, four booster pump stations along the pipeline routes, and a new booster pump at the WWTP. The project also includes building new filters, flow equalization basins, and expanded recycled water and secondary effluent pump stations at the treatment plant to increase the capacity of recycled water production by 4.5 mgd.

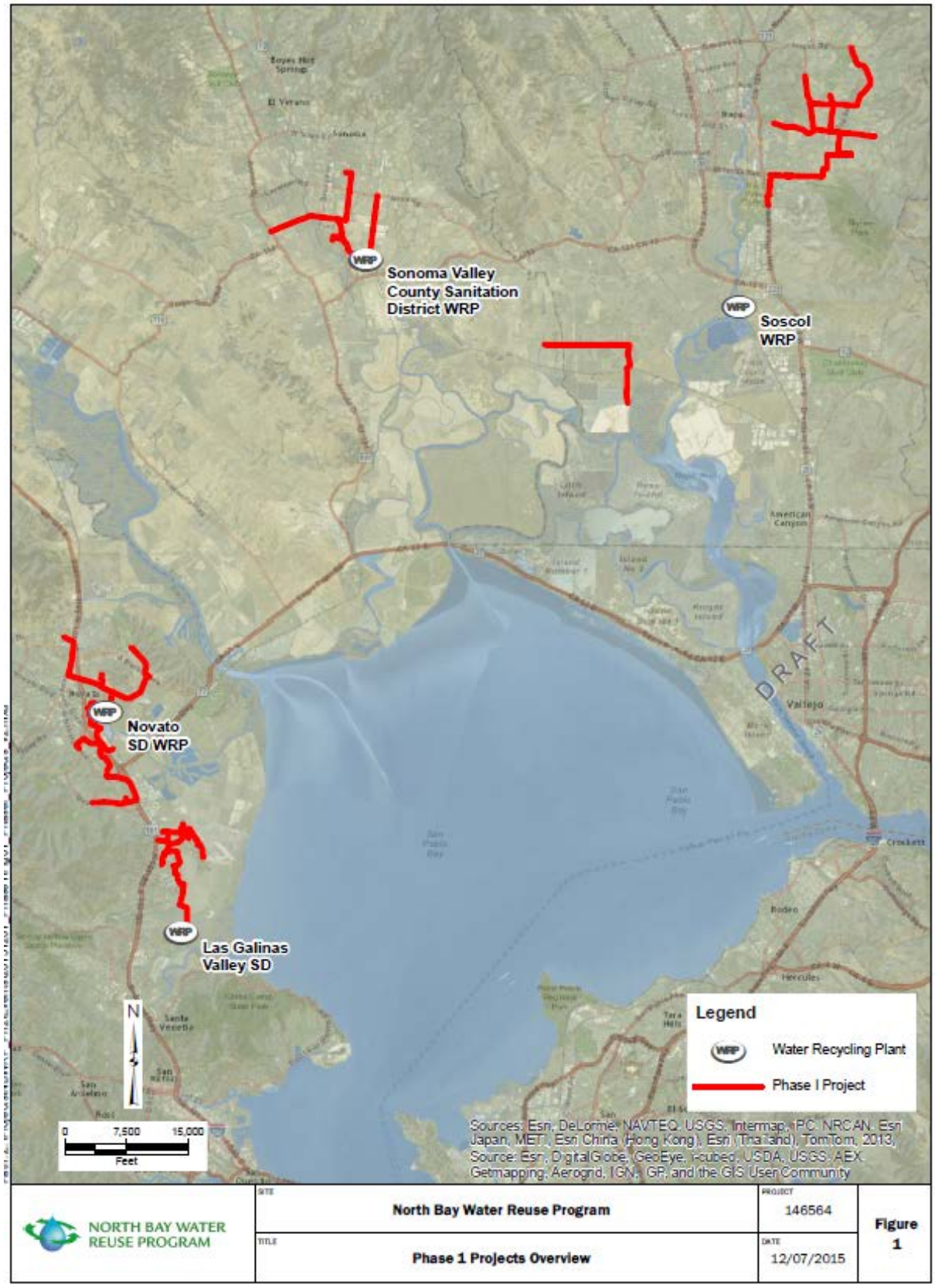

Figure 1. North Bay Water Reuse Program, Phase 1 Projects Overview

Summary of Phase 1 Results and Benefits

When the NBWRP was first conceptualized local agencies agreed to jointly plan and individually implementation their projects over time with their own schedule for design, bid, award, and construction. This allows the Phase 1 projects to be brought online incrementally, serving water across the region as projects are completed. This approach also facilitates efficient Program planning and management for both federal and state grants and local agency budgets.

What was not apparent at the time was the significance and beneficial impact the Program would have on the region's long-term water supply reliability. This has been demonstrated in multiple ways as this new water resource is distributed to diverse end-users during this punishing drought. New, spin-off agricultural irrigation projects have been developed that receive recycled water from member agencies facilities, environmental restoration projects have been implemented that never would have been accomplished without this Program and, real, measurable reductions in potable demand have been seen by urban water districts.

With Reclamation's assistance, the NBWRA built critical capacity into the region's future water supply but also into its member agencies who now know first-hand that by working together, water and sanitation districts can add tremendously to the region's long-term quality of life.

Phase 1 of the NBWRP was authorized in P.L. 111-11 Section 9110 for $25 million in federal funds. By establishing strategic partnerships with local, state and federal agencies with similar mandates, the NBWRP has been able to maximize the benefits of multiple funding sources to facilitate its progress. It is anticipated that at the completion of Phase 1, the NBWRA members will have designed and constructed $104 million in recycled water infrastructure that was funded through $25 million in federal assistance, $6 million in state grant funds, and $73 million in local contributions.

NBWRP Components Included in This Funding Opportunity

It is anticipated that this funding opportunity will be the final request under the Phase 1 authorization. NBWRA requests grant assistance for the following projects: The Novato Central Service Area Treatment Plant Expansion and Distribution Project, Novato South Service Area/LGVSD-MMWD Recycled Water Project, and the SVCSD Wastewater Treatment Plant Improvement Project.

- The Novato Central Service Area Treatment Plant Expansion and Distribution Project is a partnership between the Novato Sanitary District (NSD) and North Marin Water District (NMWD). The Project will implement service in the Novato Central Service Area through expansion of the Recycled Water Facility at the Novato SD wastewater treatment plant (WWTP) and construction of a recycled water distribution system serving users south of the WWTP.
- The Novato South Service Area/ LGVSD-MMWD Recycled Water Project will expand LGVSD's tertiary treatment capacity to 5.4 mgd, immediately providing 46 AFY for urban landscaping uses and providing redundancy for additional future recycled water projects.
- SVCSD Wastewater Treatment Plant Improvement Project is comprised of approximately 1000 feet of 8- to 24-inch pipeline and associated pumping upgrades within the District's wastewater treatment plant.

The federal funds requested in this application represent approximately 19.4 percent of the NBWRP Authorization. These funds would bring the total NBWRP Phase 1 federal funding received to $25,000,000, or 100 percent of the federal funds authorized in P.L. 111-11 Section 9110.

The Novato Central Service Area Treatment Plant Expansion and Distribution Project

Novato Sanitary District (NSD) and North Marin Water District (NMWD) have partnered implement service in the Novato Central Service Area through expansion of the Recycled Water Facility to the Novato SD wastewater treatment plant (WWTP) and construction of a recycled water distribution system serving users south of the WWTP. The North Central Service Area project is shown on Figure 2.

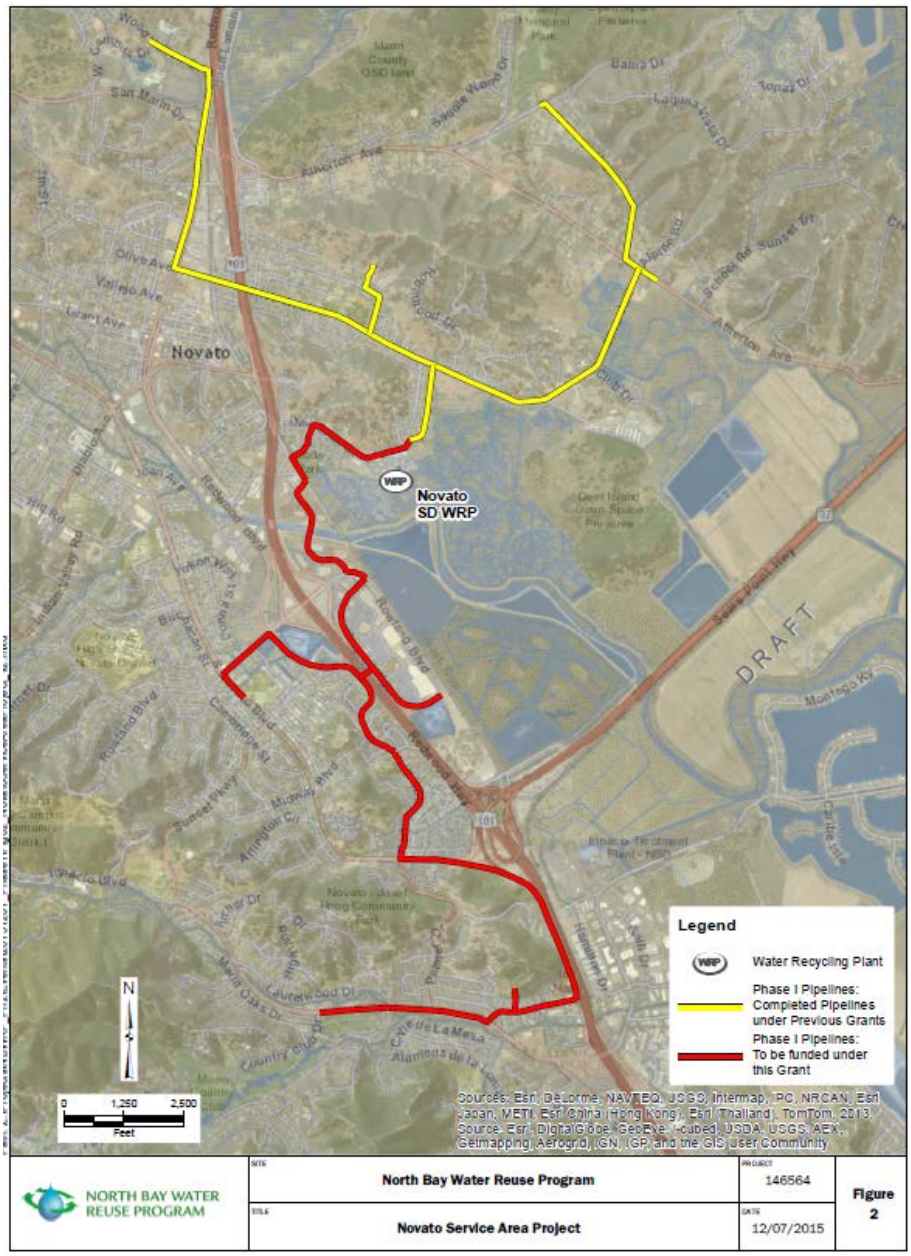

Figure 2. Novato Service Area Project

Novato SD Facilities

The Recycled Water Facility (RWF) at the Novato WWTP was designed to allow for future expansion to meet increased recycled water demands. NMWD is planning to expand their recycled water distribution system to serve the Central Service Area. Existing and future demands covering both the north and central service. Meeting increased demands in the north service area and expanding service to the central service area will require the existing RWF capacity to be increased from 0.85 mgd to 1.7 mgd.

All of the proposed improvements will be constructed within the existing Novato WWTP fence line. The existing RWF was designed to accommodate expansion to serve the Central Service and will not require additional environmental permitting. The existing recycled water production facilities at the Novato treatment plant site are permitted under the Regional Water Quality Control Board (RWQCB) General Water Recycling Order. An additional filter feed pump, backwash pump, and distribution pump, as well as, an additional filter are needed. Piping and clearwell modifications will also be required to increase the Novato RWF capacity to 1.7 mgd. The cost estimate for the treatment plant expansion component of the Novato Central Service Area is $2,018,000. North Central Service Area treatment project facilities are shown on Figure 3.

Novato SD is requesting $500,000 in federal funds, which represents approximately 25 percent of the project costs.

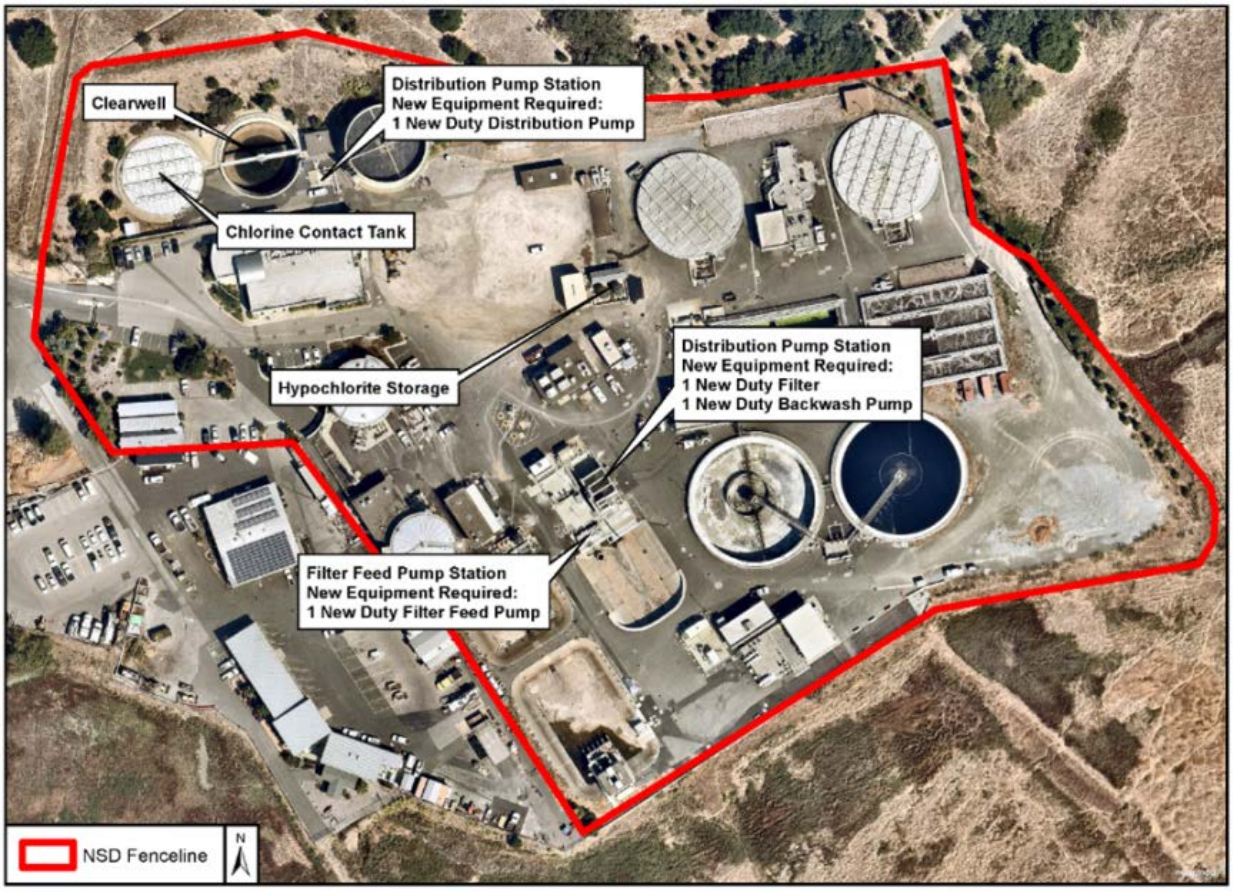

Figure 3. North Central Service Area Treatment Facilities – Existing NSD RWF Process Structures with New Equipment Required to Increase Capacity to 1.7 mgd

North Marin WD Facilities

NMWD will implement service in the Novato Central Service Area through construction of a recycled water distribution system from the Novato SD Waste Water Treatment Plant (WWTP) south to Rowland Boulevard and the Vintage Oaks shopping center, and across Highway 101 to serve urban users west of Highway 101. The primary customers within the Central Service Area would be Vintage Oaks, Lynwood School, Homeowners Associations on the west side of Highway 101, and customers along Ignacio Boulevard, including the Marin Country Club (MCC), in addition to other smaller secondary users. At the MCC, irrigation for the 58 acre eighteen-hole golf course is currently supplied by a combination of MCC's own sources and potable water from NMWD. MCC's local source includes a well and a significant amount of runoff and spring water which is captured in MCC's six storage ponds along Arroyo San Jose. MCC uses potable water purchased from NMWD as a supply during late summer/early fall months.

The Pipeline route runs from Novato Sanitary District Recycled Water Facility to the Vintage Oaks Novato SD's existing utility within paved right of way on Davidson Street from the Novato SD WWTP to the intersection with Louis Drive. The pipeline would extend along Louis Drive, through the field at Slade Park, and under the Sonoma Marin Area Rapid Transit (SMART) railroad ROW (via jack and bore or horizontal directional drill, discussed below) to Franklin Street (paved path). Approximately 1,000 feet of pipe would be installed within the paved trail on Franklin Street, south to the Novato Community Hospital property. The pipeline would extend at a right angle from Franklin through the Novato Community Hospital parking lot to the cul-de-sac of Rowland Way. The pipeline would be installed within the paved right-of way on Rowland Way (including the crossing at Novato Creek, discussed below) to a connection point/turn out at Vintage Way to serve the Vintage Oaks shopping center. From Vintage Way (to Redwood Boulevard) the pipeline would cross Highway 101 by a jack and bore or horizontal directional drilling from Vintage to Redwood Boulevard.

The 12-inch pipeline would be installed north from the Highway 101 crossing on Redwood Boulevard to Rowland Boulevard, and then west to South Novato Boulevard to serve Lynwood School. South from the Highway 101 crossing at Redwood Boulevard, the pipeline would be installed within the paved roadway right of way to the NMWD easement in an existing paved path that connects to Briarwood Court and continues on Redwood Boulevard to South Novato Boulevard. The distribution system at South Novato Boulevard would then go east to the Highway 101 vehicle on-ramp to the western entrance of the Caltrans bike path (along the west side of Highway 101) and continue within the Caltrans bike path ROW south to Entrada Drive through Inn Marin property (parking lot) to Ignacio Boulevard. The pipeline would be installed within the paved roadway ROW on Ignacio Boulevard and terminate 300 feet east of the intersection at Country Club Drive (near Laurelwood Drive). A spur would also extend from Entrada Drive to the existing NMWD Norman Tank. This distribution system extension would allow use the District's existing 500,000-gallon Norman Tank for necessary expanded reclaimed water storage. The pipeline route is shown in Figure 2.

The cost estimate for the distribution system expansion component of the Novato Central Service Area Treatment Plant Expansion and Distribution Project is $11,930,000. NMWD is requesting $2,750,000 in federal funds, which represents approximately 23 percent of the project costs.

Novato South Service Area/LGVSD-MMWD Recycled Water Project

LGVSD operates a 0.7-mgd Recycled Water (RW) facility, with full redundancy, which produces disinfected tertiary recycled water. The RW facility utilizes membrane ultrafiltration and ultraviolet (UV) disinfection to treat secondary effluent drawn from wastewater treatment plant deep bed filter effluent channel.

Marin Municipal Water District (MMWD) also has a recycled water treatment facility on the LGVSD site. This facility is over 25 years old, has reached its useful life, and will be removed as part of this project. The plant does not have redundancy and cannot meet peak recycled water demand periods, so all recycled water demands in the MMWD system are not able to be met.

The LGVSD-MMWD Recycled Water Project will expand the LGVSD RW facility treatment plant capacity to 5.4 mgd by building out the four trains of pressure membranes inside the existing RW building (see Figure X - attach Project Location figure). Ancillary pumps, blowers, piping, and valves will also be installed as part of this expansion. The feed pump and distribution pump systems will also be modified and expanded for this increased flow capacity. The existing UV disinfection system will remain in place and increased disinfection capacity will be obtained by using the existing MMWD chlorine contact basin and storage tank. This expansion and combination of facilities will increase the RW filtration capacity to 5.4 mgd. Chlorine contact basin capacity may be increased because of its current 4 mgd capacity.

In addition to these improvements, a new pre-treatment process for the recycled water storage pond return water will be required to remove algae and other constituents prior to its treatment in the RW facility. The existing MMWD treatment facility will be demolished and removed. LGVSD may also add a fill station for distribution of recycled water to individual customers.

This project is necessary to improve the quality and reliability of the recycled water served to the MMWD system. Currently, the MMWD facility produces 550-600 AFY. The plant expansion will increase recycled water use due to the ease of starting and stopping the membrane filtration process. This project will allow MMWD to distribute more recycled water to their existing customers (who at times use potable water for irrigation) and increase the reliability of those supplies because of fewer operational and water quality issues. Under current operations, the MMWD plant typically shuts down during the winter months when recycled water demand is about 45 AF.

The additional tertiary treatment capacity will also allow LGVSD to serve potential future projects, such as the McInnis Marsh Restoration Project's horizontal levees (which will also mitigate against flood and sea level rise) and an organic crop in the LGVSD reclamation areas.

The LGVSD-MMWD Recycled Water Project is estimated to cost $5,424,000. LGVSD is requesting $847,150 in federal funds, which represents approximately 15.6 percent of the project costs.

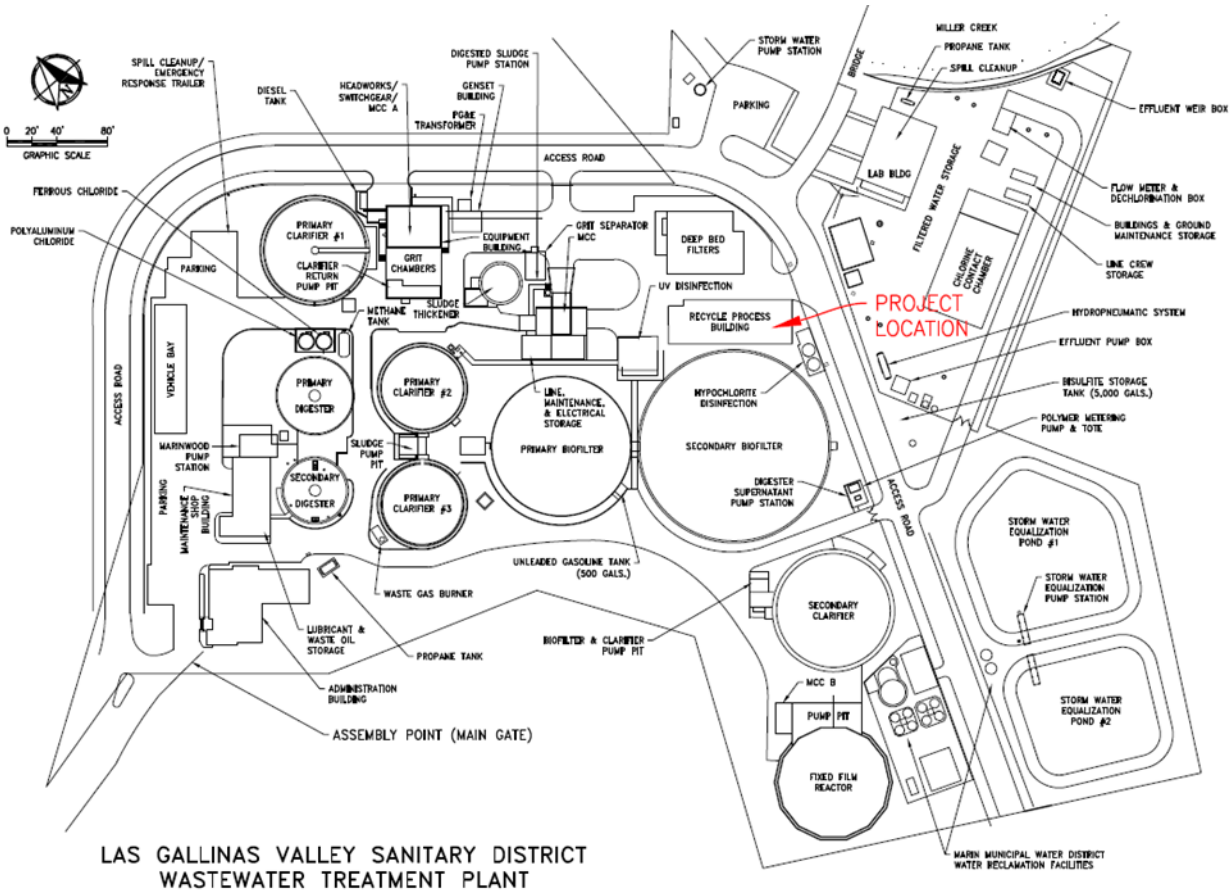

Figure 4. LGVSD-MMWD Recycled Water Project

SVCSD Wastewater Treatment Plant Improvement Project

The SVCSD Wastewater Treatment Plant Improvement Project consists of design and construction of improvements at SVCSD's wastewater treatment plant. The improvements will consist of new infrastructure (flow meter; butterfly valves; pressure relief and gate valves; pumps; hydro-pneumatic tank; electrical and instrumentation; approximately 2000 feet of 8- to 24-inch diameter PVC pipeline, approximately 150 feet of 24-inch steel pipeline and miscellaneous appurtenances) within SVCSD's existing wastewater treatment facility. The project will allow SVCSD operational flexibility, enabling SVCSD to retain more recycled water during peak flow conditions during the winter. This retained recycled water will be directed to recycle water users north and south of the wastewater treatment facility for seasonal storage and additional usage. In addition, these improvements will add the ability to serve recycled water to urban users at municipal service pressure and reliability throughout the year.

The projects will allow SVCSD to effectively manage its recycled water by maximizing the delivery of recycled water thereby ensuring agricultural and urban users' needs are met through operational efficiency.

SVCSD's Wastewater Treatment Plant Improvements are estimated to cost $3,118,800. SVCSD is requesting $750,000 in federal funds, which represents approximately 24 percent of the project costs

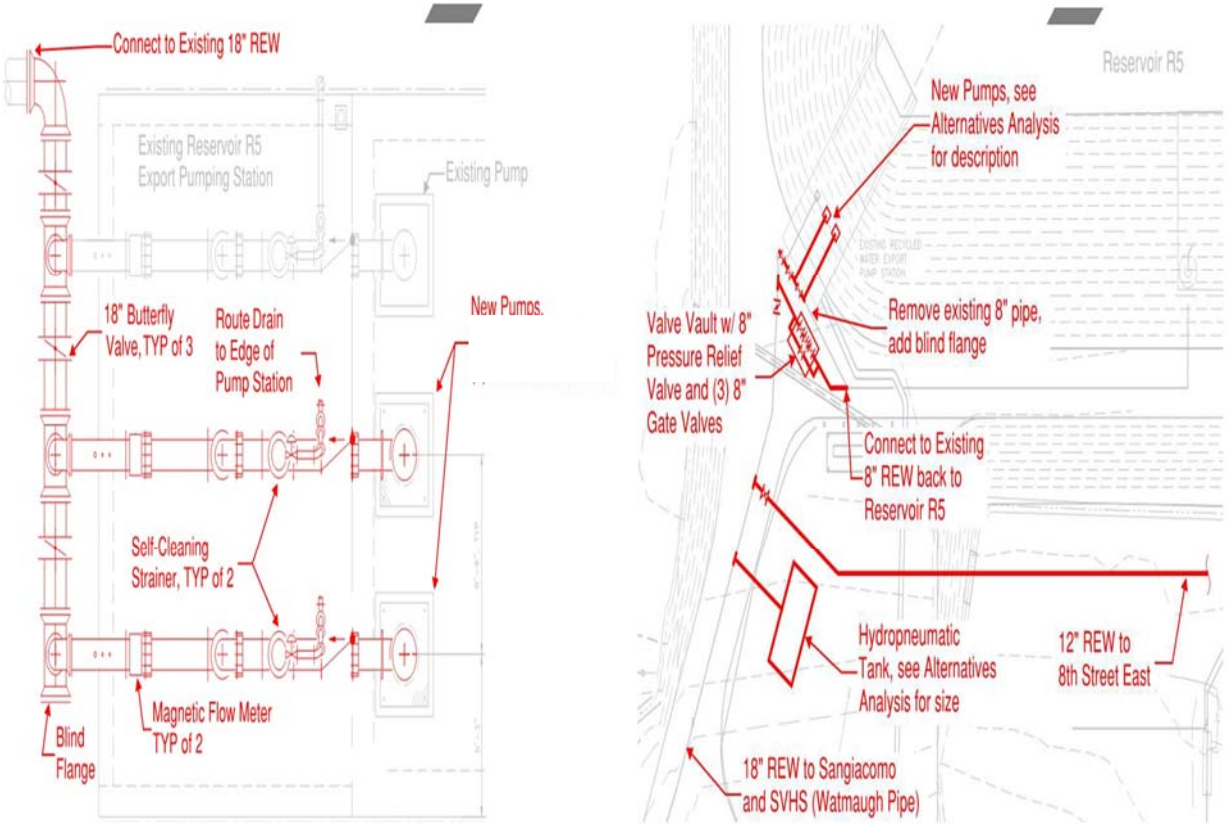

Figure 5. SVCSD Wastewater Treatment Plant Improvements

Funding Request

To date, the Sonoma County Water Agency (as administrative agency for NBWRA) has been granted $176,502 in federal funding to cover administrative expenses for Phase I of the NBWRP. Due to efficient use of funds, SCWA has lowered its estimated cost of administering the grant and does not forecast the need for additional funding for this purpose. Accordingly, there is no request for funding to cover administrative expenses in this application.

Therefore, this application requests $4,847,150 which is the total of the Novato Central Treatment Plant Expansion and Distribution Project federal share of $3,250,000, LGVSD-MMWD Recycled Water Project of $847,150, and SVCSD Wastewater Treatment Plant Improvements Project of $750,000. If fully funded, the projects in this grant will fulfill the remaining federal obligation under P.L. 111-11 Section 9110.

The NBWRA, has Cooperative Agreement R14AC00018 (formerly R10AC20093) with Reclamation, providing up to $17,672,000 of Federal funds[1]. Funds provided under this application request could be administered by modifying the existing Agreement. Reclamation has already performed a Cost Price Analysis on the work proposed to be funded through this application in Agreement R14AC0018.

Evaluation Criteria

Evaluation Criterion 1: Water Supply

Subcriterion No. 1a: Stretching Water Supplies

35 points

Points will be awarded based on the extent to which the project is expected to secure and stretch water supplies. Consideration will be given to the amount of water expected to be made available by the project and the extent to which the project will reduce demands on existing facilities and otherwise reduce water diversions.

1. How many acre-feet of water are expected to be made available each year upon completion of the project? Please use the total project water savings, not just the cost of work through September 30, 2018.

After completion of all the NBWRP Phase 1 projects, the total amount of recycled water used for irrigation will increase to 3,757 AFY. In addition, up to 1,700 AFY of tertiary treated recycled water will be released to Napa Salt Marsh for habitat restoration. The NBWRP components included in this application will provide 322 AFY of tertiary treated recycled water for irrigation uses in the Novato Central Area, 46 AFY in the Novato South Service Area service area, and 70 AFY in the Sonoma Valley Recycled Water Project. In addition to project yield the projects provide key operational improvements to the NBWRP Phase 1 Program: redundancy for future water projects, operational flexibility to retain more recycled water during winter peak flow conditions to be directed to recycle water users for seasonal storage, and the ability to serve recycled water to urban users at municipal service pressure and reliability throughout the year.

[1] In addition, the NBWRA had Cooperative Agreement R10AC20R87 with Reclamation, providing $7,328,000 of funds from ARRA. Cooperative Agreement R10AC20R87 is closed. Between Cooperative Agreements R10AC20R87 and R14C0018, the NBWRA had financial assistance agreements in place for its authorized Federal funding of $25,000,000.

2. Will the project reduce, postpone, or eliminate the development of new or expanded non-recycled water supplies?

All local sources of water are over-allocated. The North San Pablo Bay area is under heavy water use stress due to drought impacts, diminishing and over-drafted groundwater supplies, over-diverted surface water supplies, and the need for environmental restoration. Groundwater is the only potable water supply in the MST area. There are few viable options for new water storage projects that do not involve recycled water. Both the NBWRP as a whole and the NBWRP components included in this application will increase recycled water supply in the North Bay and reduce or delay development of deeper or new groundwater wells that could exacerbate saline intrusion from the Bay. The projects will reduce overdraft of marginal groundwater supplies and, reduce the dependence upon potable water for agricultural and irrigation uses. These projects will provide a drought-proof water supply to offset potable water used for irrigation. Furthermore, using recycled water instead of potable water for irrigation generates added opportunity for the areas water supply portfolio, thereby delaying the need for additional infrastructure (and associated costs) for future potable water supply.

3. How significantly will the demand on existing Federal water supplies be reduced? List the expected reduction to Federal water supply demand (in acre-feet) and the amount of water currently supplied directly or indirectly by a Federal facility to the project sponsor. Provide calculations.

No Federal water supplies are provided to the NBWRA service area because the area is too remote from the nearest Federal water sources. Connecting to the Orland Project, the Sacramento River, or the Delta would be exorbitantly expensive and would reduce Reclamation's ability to use existing Federal water supplies for meeting current obligations.

Napa County, an NBWRA member agency, is a contractor for the California State Water Project, which has the same supply, the Sacramento–San Joaquin River Delta, as the Bureau of Reclamation's Central Valley Project. The use of local supplies such as recycled water helps keep water importers such as Napa County from seeking additional water from the Delta. This in turn, is a benefit for the federal water supplies.

4. How will the project reduce diversions from natural watercourses or withdrawals from aquifers? Responses should be specific (including number of acre-feet) and should include the percentage by which diversions or withdrawals will be reduced.

As noted above, all local water sources are drought impacted and under well-documented heavy stress and, if over use continues, it may lead to long-term degradation due to sea water intrusion, water quality degradation, and/or reduced reliability. The NBWRP will reduce these stresses on local water supplies by providing 3,757 AFY of tertiary treated recycled water to the North San Pablo Bay for irrigation demands and up to 1,700 AFY for habitat restoration. These recycled water deliveries are a direct reduction of diversions from the local surface supplies and groundwater basins.

5. What performance measures will be used to quantify actual benefits upon completion of the project?

Napa SD, SVCSD and all the NBWRA member agencies keep monthly records of recycled water usage at the irrigation meters located in the project areas. Benefits will be measured by customer surveys to ensure the quantity and quality of the delivered water meets

customer expectations and by noting the extent to which the recycled water allows greater flexibility in water operations.

Subcriterion No. 1b: Contributions to Water Supply Sustainability

20 points

Points will be awarded for projects that contribute to a more sustainable water supply.

1. Will the project make water available to address a specific concern (e.g., water supply shortages due to climate variability, and/or heightened competition for limited water supplies)? Consider the number of acre-feet of water to be made available. Explain the specific concern and its severity. Also explain the role of the project in addressing that concern and the extent to which the project will address it.

Yes. The North Bay region suffers from water supply shortages due to drought and associated impacts of climate change exacerbated by increased competition for limited surface and groundwater supplies. The regional water supply is further affected by seawater intrusion due to groundwater overdraft, impaired groundwaters require alternative sources for potable supplies, and increased State regulation of limited surface supplies for fisheries and aquatic species restoration. Several NBWRA agencies rely upon imported surface water from the Russian River to meet potable needs. NBWRA member agencies are committed to implementing projects that will reduce demands on the Russian River and thereby reduce conflicts from competing uses by leaving additional water in the river for environmental and other purposes. Water users in the MST area are facing chronic groundwater depletion and increased pumping and treatment costs. The Program will provide 3,757 AFY of tertiary treated recycled water to the North San Pablo Bay for irrigation demands and up to 1,700 AFY for habitat restoration to help alleviate the water supply and supply reliability needs in this area.

The projects will build resiliency into the region's water supply through increased development and use of recycled water to offset potable water supplies for non-potable demands. The NBWRP meets this need by providing "drought resistant" recycled water for urban uses and irrigation in the Napa, Sonoma, and Marin County areas.

The NBWRP is a model for maximizing the benefits of limited water resources in the West. As each of the projects in the NBWRP are implemented, demand is reduced on potable water across the three-county program area by providing a sustainable long-term supply of recycled water for urban, agricultural and environmental uses. This comprehensive regional Program provides a sound approach toward meeting local, state, and federal water management objectives and regulatory requirements and helps put recycled water to it broadest, most beneficial use.

2. Will water made available by this project continue to be available during periods of drought? To what extent is the water made available by this project more drought-resistant than alternative water supply options? Explain.

Yes, because the source water is from a municipal facility and not from groundwater or surface waters. So long as the municipal facility remains in operation (and there is no reason to believe it would be non-operational), this project will continue to recycle and reuse the water. Therefore, it will be available irrespective of hydrologic or climatic conditions. Recycled water is a new reliable water supply for the region. The NBWRA member agencies

have no other feasible options to obtain alternate drought resistant water supplies due to geographical location and lack of surface water storage facilities.

Evaluation Criterion 2: Status of Project

Subcriterion No. 2a: Progress Toward Completion of an Authorized Title XVI Project

20 points

Points will be awarded for projects that will bring an authorized Title XVI project to completion (i.e., to full Federal funding levels) or close to completion.

1. How much Federal funding has been provided for the authorized Title XVI project to date?

Please see the table below for a summary of Federal funding received to date for all the NBWRP Phase 1 projects.

Project	Member Agencies	ARRA Grant 2009	WaterSMART Title XVI Grants 2009-2015	Total Federal Funding Received
Novato South	LGVSD & NMWD	$1,425,500	$1,679,875	$3,105,375
Novato North	Novato SD & NMWD	$2,637,500	$0	$2,637,500
Novato Central	Novato SD & NMWD	$0	$0	$0
Sonoma Valley Recycled Water Project	SVCSD	$1,727,500	$2,342,988	$4,070,488
Salt Marsh Project	SVCSD			
MST Project & Napa State Hospital Project	Napa SD & Napa County	$1,537,500	$8,801,987	$10,339,487
TOTAL		$7,328,000	$12,824,850	$20,152,850

The projects in this grant application will be completed under the NBWRP Phase 1 authorization and if fully funded, will fulfill the remaining federal obligation under this authorization. The Phase 1 authorization provided for $25,000,000 in federal grant assistance and of that amount, Reclamation has provided $20,152,850 (81%), leaving $4,847,150 (19%) available. The Projects in this application request the remaining balance of the authorization.

Please see the table on following page for a project specific funding summary of Phase 1 projects in this application seeking grant assistance.

Project	Member Agencies	Project Cost	Previous Federal Funding Received for This Project
Novato Central Service Area Treatment Plant Expansion and Distribution Project	Novato SD	$2,018,000	$0
Novato Central Service Area Treatment Plant Expansion and Distribution Project	NMWD	$11,930,000	$0
LGVSD-MMWD Recycled Water Project	LGVSD & MMWD	$5,424,000	$0
SVCSD Wastewater Treatment Plant Improvements	SVCSD	$3,118,800	$0
Grant Administration for 2016-2018	SCWA	$0*	$0
Total		$22,490,800	$0

* $0 dollars in additional funding. SCWA will utilize funds previously obligated under other NBWRP Phase 1 sub-projects to conduct all administrative tasks related to these project, as well as, final cooperative agreement closeout.

2. How much Federal funding is necessary to fully satisfy the authorized Federal cost-share?

As this project will be completed under the NBWRP Phase 1 authorization, and if fully funded, will fulfill the Phase 1 authorization of $25,000,000. To date, Reclamation has provided $20,152,850 leaving $4,847,150 in capacity under the authorization.

Please see the table below for the amount of federal funding being requested through this funding opportunity. The total estimated project costs for the three Projects and the Fiscal Year (FY) 2016 grant administration is $4,847,150. Through this funding opportunity, the NBWRA is requesting $4,847,150.

Project	Member Agencies	Project Cost	Previous Federal Funding Received for This Project	Additional Funding Requested for This Project
Novato Central Service Area Treatment Plant Expansion and Distribution Project	Novato SD	$2,018,000	$0	$500,000
Novato Central Service Area Treatment Plant Expansion and Distribution Project	NMWD	$11,930,000	$0	$2,750,000
LGVSD-MMWD Recycled Water Project	LGVSD & MMWD	$5,424,000	$0	$847,150
SVCSD Wastewater Treatment Plant Improvements	SVCSD	$3,118,800	$0	$750,000
Grant Administration for 2016-2018	SCWA	$0*	$0	$0
TOTAL		$22,490,800	$0	$4,847,150

* $0 dollars in additional funding. SCWA will utilize funds previously obligated under other NBWRP Phase 1 sub-projects to conduct all administrative tasks related to these project, as well as, final cooperative agreement closeout.

The funding request for Novato SD $500,000 and NMWD of $2,750,000 will complete the Novato Central Service Area Treatment Plant Expansion and Distribution Project. The LGVSD and MMWD funding request of $847,150 will replace an aging MMWD facility and provide a

resilient supply. SVCSD's funding request of $750,000 will provide improvements and efficiency of the treatment facilities and distribution system in Sonoma County.

The SF-424 and SF-424Cs included in this application package show a federal funding request of $4,847,150, a total project cost of $22,490,800, and an eligible project cost of $19,388,600 to reflect the project cost represented by 25 percent Federal funding and 75 percent non-federal cost share.

More detail on the project costs is included in the section "Description of Expenditures Planned through September 2018."

Subcriterion No. 2b: Readiness to Proceed

10 points

Points will be awarded based on the extent to which the project is ready to proceed, including consideration of the following:

1. What is the status of necessary environmental compliance measures?

The following environmental compliance measures apply to all the NBWRP Phase 1 Projects:

- Public Draft Environmental Impact Report/Environmental Impact Statement (EIR/EIS). Circulated May 2009. (Available at http://nbwra.org/docs/)
- Final EIR. Approved by Member Agencies December 2009. This included: Project approval of Phase 1; findings of fact; and approval of the California Environmental Quality Act (CEQA) Mitigation Monitoring and Reporting Plan (MMRP). The MMRP is too large to include in this application package; however, the NBWRA is happy to provide the MMRP if requested. (Available at http://nbwra.org/docs/)
- USFWS Biological Opinion. Issued by USFWS July 2010 for all of the Phase 1 Projects, including the MST Project. The Biological Opinion is too large to include in this application package; however, the NBWRA is happy to provide the Biological Opinion if requested.
- Final EIS. Circulated by Reclamation for Public Comment. June 2010. (Available at http://nbwra.org/docs/)
- Record of Decision (ROD) signed January 28, 2011, approving all Phase 1 projects, including the MST Project and the Sonoma Valley Recycled Water Project. The ROD includes the CEQA MMRP. The ROD is included in this application package as Attachment A.
- Section 106 Consultation. State Historical Preservation Officer (SHPO) issued letter of concurrence to Reclamation's determination of no adverse effect to cultural resources on March 21, 2011. The SHPO letter is included as Attachment B. The Bureau of Reclamation is completing Section 106 Consultation with SHPO for minor pipeline route changes associated with the Novato Central Service Area, and anticipates a letter of concurrence with the determination of no impact to cultural resources to be issued by SHPO in December 2015.
- For the Novato Central Service Area, NMWD has produced a Supplemental Environmental Assessment to the Environmental Impact Statement and Addendum to the Environmental Impact Report. The NMWD Board of Directors made a CEQA approval for this document Sept 15, 2015. The Bureau of Reclamation is completing its review

process and is anticipated to issue a Finding of No Significant Impact (FONSI) in December 2015.

- All of the work for the LGVSD-MMWD Recycled Water Project will occur within the footprint of the existing LGVSD/MMWD facilities; therefore, a Mitigated Negative Declaration will be necessary. This document will be completed by the end of March 2016.

When is environmental compliance expected to be complete?

The NBWRP has been determined compliant with NEPA, Section 7, and Section 106 except for the new NMWD documents as indicated above.

For the Novato Central Service Area, the Bureau of Reclamation is completing its review process and is anticipated to issue a Finding of No Significant Impact (FONSI) in December 2015.

The Mitigated Negative Declaration for the LGVSD-MMWD Recycled Water Project is anticipated to be complete at the end of March 2016.

Provide a detailed schedule of all environmental compliance activities and a schedule that indicates when construction is expected to begin.

The table below presents the schedule for each of the NBWRP Phase 1 projects.

Project	Phase	Schedule
Novato South (Hamilton Field)		
LGVSD / WWTP Improvements		Complete
LGVSD-MMWD Recycled Water Project	Design	November 2015 – October 2016
	Bid	October – November 2016
	Award	November 2016
	Construction	November 2016 – September 2017
NMWD / Pipelines & Storage		Complete
Novato North		
Novato SD / WWTP Improvements		Complete
NMWD / Pipelines & Storage Rehabilitation		Complete
Novato Central		
NMWD	Design	November 2015 –January 2016
	Bid	January- February 2016
	Award	May 2016
	Construction	April 2016 – May 2017
Novato SD	Design	March 2016 – November 2016
	Bid	December 2016 – January 2017
	Award	February 2017
	Construction	February 2017 – November 2017

Table continued on next page

Project	Phase	Schedule
Sonoma Valley Recycled Water Project – SVCSD		
Reservoir R5		Complete
Recycled Water Line		Complete
Pump Station @ WWTP	Design	May 2016
	Bid	May 2016
	Award	August 2016
	Construction	April 2017
McGill Recycled Water Project		Complete
5th Street East Recycled Water Project	Design	July 2015
	Bid	Jan 2016
	Award	April - May 2016
	Construction	Aug 2016
Salt Marsh Project - SVCSD		Complete
MST Project Area		
MST Recycled Water Pipeline - Napa SD & Napa County		
	Design/Bid/Award	Complete
	Construction	Jul 2014 – Dec 2015
MST Pipeline Distribution Lines- Napa SD & Napa County		
	Design	Apr 2015-Aug 2015
	Bid	Aug 2015-Sep 2015
	Award	Oct 2105
	Construction	Nov 2015-Aug 2016
Napa SD Portion of MST Recycled Water Pipeline (Napa State Hospital segment)		Complete
Imola Avenue Extension		Complete
Treatment Capacity Increase Project (Phase 1)	Design/Bid/Award	Complete
	Construction	July 2013 – Apr 2015
Recycled Water Pump Station North/South Split	Design	Apr 2014 – Apr 2015
	Bid	May 2015 – Jun 2015
	Award	Jun 2015
	Construction	Jul 2015 – Feb 2016

2. What is the status of required State and Federal permits for the project? When are all required permits expected to be obtained?

See above. All State and Federal permits are obtained.

Evaluation Criterion 3: Environment and Water Quality

30 points

Points will be awarded based on the extent to which the project will improve surface, groundwater, or effluent discharge quality; will restore or enhance habitat for non-listed species; or will provide water or critical habitat for federally listed threatened or endangered species:

1. Will the project improve the quality of surface or groundwater? To what extent will the project improve effluent quality beyond levels necessary to meet state or Federal discharge requirements?

The NBWRP captures high quality effluent for irrigation reuse and habitat restoration in the drought impacted, water short areas of the San Pablo Bay watershed in Marin, Sonoma, and Napa Counties. The supply of tertiary treated wastewater from the NBWRP will improve water quality in the North San Pablo Bay area in the following ways:

- Reduce disposal of treated wastewater to San Pablo Bay - The NBWRA member agencies face strict regulatory limits on the timing and quality of the treated water they can discharge to the San Pablo Bay, as well as the rivers and streams that flow to it. By treating the wastewater to stricter regulatory levels required for reuse, the agencies can recycle the water productively to address water supply needs and reduce the amount released to San Pablo Bay and its tributaries. Implementation of Phase 1 projects would have an estimated 2020 discharge reduction of 6,121 AFY for all the member agency WWTPs combined.
- Improve instream flows by reducing agricultural diversions - The NBWRP provides recycled water to local irrigators who historically have dammed local streams and diverted limited local runoff to irrigation uses to restore the natural systems that drain to the bay.
- Improve groundwater quality by reducing overdraft of the Sonoma Valley and MST groundwater basins - The MST groundwater basin has been over pumped, with adverse effects on water levels and quality. Groundwater quality problems include arsenic, boron, iron, and manganese in concentrations above drinking water standards in groundwater wells in southern Napa County. The Sonoma Valley groundwater basin is facing encroaching saline intrusion, also affecting agricultural wells. The NBWRP will provide an alternative source to the use of groundwater in these areas, thereby reducing groundwater pumping and allowing for basin recharge.
- Provide habitat restoration of bittern ponds in the Napa-Sonoma Salt Marsh - Disinfected tertiary treated wastewater from the SVCSD WWTP will be delivered to the Napa Salt Marsh ponds as a dilution source for bittern ponds, thereby improving water quality. The recycled water would be mixed with water from Ponds 7 and 7A. After the pond restoration is complete, the recycled water would be used for agricultural irrigation.

2. Will the project improve flow conditions in a natural stream channel? Will the project restore or enhance habitat for non-listed species? If so, how?

The NBWRP will provide recycled water to agricultural users who have historically diverted stream flows that connect to San Pablo Bay. Doing so allows flows to remain in-stream providing riparian, fishery and aquatic species habitat, a benefit to local and regional watersheds that contribute to surface water supplies within the NBWRP project area. These

include the Novato Creek Watershed, and Russian River Watershed, all of which provide habitat for non-listed species.

Restoration of the Napa River Unit has long been a vision for local resource agencies, conservationists, and planners. It is one of the largest tidal restoration projects on the west coast of the United States and one of many restoration projects throughout the San Francisco Bay area. Vegetation along the northern reach of the Salt Marsh Project alignment includes ruderal species, saltgrass and pickleweed, annual grasses, coyote brush, milk thistle, fennel, curly dock, mustard, radish, yarrow, peppergrass, and iceplant. SVCSD has observed over 115 bird species at their Hudeman Slough enhancement wetlands.

3. Will the project provide water or habitat for federally listed threatened or endangered species? If so, how?

Yes, this project will provide water directly affecting a federally listed threatened or endangered species. Project implementation will result in potable water offsets, which provide a corresponding benefit to local and regional watersheds that contribute to surface water supplies within the NBWRP project area. These include the Novato Creek Watershed, and Russian River Watershed, all of which provide habitat for the state and federally listed central coast steelhead. Additionally, the Russian River Watershed provides habitat for federally listed coho salmon and Chinook salmon. Implementation of recycled water projects that meet urban irrigation demands have substantial benefit, particularly during peak demand summer months, by assisting in the maintenance of in stream flow. Restoration of the Napa-Sonoma Salt Marsh will also improve habit for the western snowy plover, a listed species which is known to nest on the northwestern levee of salt pond 7A and marsh islands east of the access levee.

Evaluation Criterion 4: Renewable Energy and Energy Efficiency

25 points

Points will be awarded based on the extent to which the project incorporates the use of renewable energy and/or addresses energy efficiency.

All NBWRA member agencies are committed to designing recycled water projects that are energy efficient. Water recycling may reduce greenhouse gas emissions in comparison to alternate water supplies and they serve as adaptive responses to climate change because they increase local water supplies and water reliability (2008 SWRCB[2]).

1. Will the project include installing low-impact hydroelectric, solar-electric, wind energy, or geothermal power systems, or other facilities that enable use of these or other renewable energy sources to provide power to components of the project? Are any energy recovery devices or processes included in the project? Provide the amount of energy expected to be generated through renewable energy sources (in kilowatt hours). What percentage of the project's total energy consumption will be provided by installing renewable energy components?

SVCSD currently has a 1.04 megawatt solar power system installed at the WWTP. LGVSD currently has solar power installed at its recycled water facility. The Napa SD treatment plant has a biodigester where methane gas (or biogas) is captured and used to produce electricity

[2] Source: Strategic Workplan for Activities in the San Francisco Bay/Sacramento-San Joaquin Delta Estuary, SWRCB, Central Valley RWQCB & San Francisco RWQCB.

by cogeneration to help heat the digester and to power the wastewater treatment plant. No additional solar facilities are currently planned to be installed as part of the NBWRP Phase 1 projects.

2. If the project does not itself include renewable energy, will the project facilitate power generation in the water delivery system by making more water available? If so, explain the relationship between this project and any potential renewable energy improvements in the water delivery system.

The use of recycled water from the NBWRP will not make more water available for power generation facilities.

3. Will completion of the project lead to a reduction in energy consumption as compared to current water supply options? Provide calculations and describe assumptions and methodology.

Much of the energy involved in municipal water systems is used for pumping. The current average energy consumed within the NBWRA service areas is estimated at 1,120 kiloWatt-hours per AFY (kWh/AFY) of potable water served based on pump station power consumption. The average energy consumption under Phase 1 of the NBWRP would be approximately 402 kWh/AFY of recycled water served, with potential energy savings of approximately 718 kWh/AFY as compared to current energy consumption. (NBWRP EIR/EIS, 2009)

Will the project include any innovative components to reduce energy consumption or to recover energy?

The LGVSD recycled water treatment plant and booster pump station uses solar-electric power from the LGVSD's 850,000 kWh/year system. The LGVSD recycled water treatment facility is estimated to use 54,300 kWh/year from the solar power system. Some of the SVCSD treatment plant and reclamation facilities will use solar-electric power from the 1.04 MW/year solar power system.

4. How does the project's energy consumption compare to other water supply options that would satisfy the same demand as the project phase?

Recycled water is the only feasible supply source available to the NBWRA member agencies outside of their current supplies, which are challenged by limited or decreasing yield and adverse water quality. Much of the energy involved in municipal water systems is used for pumping. The current average energy consumed within the NBWRA service area is estimated at 1,120 kWh/AFY of potable water served based on pump station power consumption. The average energy consumption under Phase 1 of the NBWRP would be approximately 402 kWh/AFY of recycled water served, with potential energy savings of approximately 718 kWh/AFY as compared to current energy consumption. (NBWRP EIR/EIS, 2009)

Evaluation Criterion 5: Cost per Acre-Foot of Water and Other Project Benefits

25 points

Points will be awarded based on the cost per acre-foot of water expected to be delivered upon completion of the project and other benefits of the project. Please use costs related to the entire authorized project, not just the cost of work through September 30, 2018.

1. Reclamation will calculate the cost per acre-foot of the project using information provided by project sponsors. Please provide the following information for this calculation:

a) The total estimated construction costs, by year, for the project (include all previous and planned work).

	Calendar Year	Construction Cost
1.	2010	$877,000
2.	2011	$9,397,000
3.	2012	$22,919,000
4.	2013	$7,639,000
5.	2014	$20,753,000
6.	2015	$19,908,000
7.	2016	$2,980,000
8.	2017	$5,482,000
9.	2018	$5,482,000

b) The total estimated or actual costs to plan and design the project (note this should include the cost to complete a Title XVI feasibility study).

Design costs for the entire North Bay Water Reuse Program are estimated to be approximately $8,865,000. The cost of the NBWRP feasibility study, including environmental documentation, was approximately $3,500,000.

c) The average annual operation and maintenance costs for the life of the project (note this is an annual not total cost).

$1,249,000

d) The year the project will begin to deliver recycled water.

2012

e) The projected life (in years) that the project is expected to last (note this should be measured from the time the project starts delivering water).

50 years

f) All estimated replacement costs, by year.

Requirements for maintenance and rehabilitation of infrastructure depend on asset type, materials of construction, service conditions, maintenance practices, and

performance expectations. Industry benchmarks specific for recycled water systems are sparse, so metrics from potable water systems were used as a surrogate.

Description of Replacement Requirement		Year	Cost
1.	Pipelines – assume 50-year useful life	Replacement assumed not necessary within lifetime of the project	$0
2.	Pump equipment – assume 25-year useful life	Approximately 2037	$3,000,000
3.	Filters – assume 25-year useful life	Approximately 2037	$4,500,000
4.	Storage liner/appurtenances – assume 25-year useful life	Approximately 2037	$500,000

g) The maximum volume of water (in acre-feet) that will be produced upon completion of the project.

When complete, Phase 1 of the NBWRP will provide 3,757 AFY of tertiary treated recycled water to the North San Pablo Bay for irrigation demands. In addition, up to 1,700 AFY of tertiary treated recycled water will be released to Napa Salt Marsh for habitat restoration. Therefore, the maximum amount of water that will be produced by the NBWRP is 5,457 AFY.

2. Comparison of the cost per acre-foot of the project to the cost per acre-foot of one alternative (i.e., nonrecycled water option) that would satisfy the same demand as the proposed project. Provide the cost per acre-foot for one nonrecycled water alternative that would satisfy the same demand. Reclamation will compare the cost per acre-foot that it calculates using the information requested in question No. 1 to the cost per acre-foot for the nonrecycled water alternative provided by the project sponsor.

Phase 1 of the NBWRP will offset the use of 889 AFY of potable water with recycled water within the NBWRA service area. Without this project, the NBWRA member agencies would need to rely on the construction of SCWA's Russian River Water Supply Project in order to meet potable water demands in the future. The Russian River Project, serving water suppliers in Marin and Sonoma Counties, would increase potable water supplies to the NBWRA service area by releasing and using additional water currently stored in Lake Sonoma, and diverting water from the Russian River. Construction of the Russian River Project would begin in 2012 and would be completed in 2018. This "avoided project" consists of approximately 74,000 feet of 18 to 36-inch diameter pipelines, a storage tank with a capacity of approximately 4 million gallons, modification to an existing booster pump station, and other appurtenances.

The components of the NBWRA Phase 1 projects were included in the Bay Area Integrated Regional Water Management Plan's Proposition 84 Round 1 Implementation Grant funding proposal. The Proposition 84 funding proposal presented the following information on the avoided costs of the Russian River Water Supply Project. Capital costs for this project would amount to $174,479,000 and average annual operations and maintenance (O&M) costs would be about $1,841,000. Over the life of the project, total present value capital and O&M costs for this project would amount to $139,925,000.

The Phase 1 projects included in the Proposition 84 grant proposal would only supply 1,490 AFY of recycled water compared to the 4,654 AFY that would be available upon completion of the Russian River Project. Therefore, it is assumed that the Russian River Water Project would still be built if the NBWRP is implemented, but at a smaller scale. To offset the amount of recycled water that would otherwise be used by the Russian River Project if the NBWRP were not implemented, NBWRA would use about 33% of the water generated by the Russian River Project. Thus, 33 percent of the Russian River Project costs are assumed to be avoided by the NBWRP. The total present value avoided costs therefore amount to $46,175,000, as shown below.

	Avoided Capital Costs	Avoided Replacement Costs	Avoided O&M Costs	Total Cost Avoided	Total Discounted Costs Over 25 Years
Project Life	$174,479,000	Unknown	$34,987,000	$209,466,000	$139,925,000
% Avoided Costs Claimed by Project					33%
Total Present Value of Discounted Avoided Project Costs Claimed by the NBWRP (Total Present Value of Discounted Costs x Percent Avoided Costs Claimed by Project)					$46,175,000

Over a 25-year period, the NBWRP would provide 37,250 AF of potable water offset. Therefore, the avoided cost per acre-foot of the Russian River Project is $1,240/AF (calculated as the total present value of the Russian River Project divided by the 25-year yield of the NBWRP). Present value avoided costs for the avoided project are calculated through 2037 to match the useful life of the Russian River project components that have a 25-year project life. The operations, maintenance, and replacement costs after 25-years are unknown, thus, it would be unfair to count benefits after 2037 without knowing the comparative costs.

3. Some Title XVI project benefits may be difficult to quantify. Describe any economic benefits of the project that are not captured by the cost per acre-foot analysis, or that are difficult to quantify. Points will be awarded based on the potential economic impact of the project-related benefits.

Providing a use for the treated wastewater generated by the NBWRA member agencies would decrease discharges into North San Pablo Bay and would reduce wastewater agency operation costs during the no-discharge period. For example, LGVSD and Novato SD currently pump unused effluent to pasture fields. LGVSD estimates that the average annual cost to pump effluent to the pasture lands from June 1 to October 31 is about $11,000. By delivering recycled water to the Novato South Project area, LGVSD would not incur these costs.

The reliability of a water supply refers to the ability to meet water demands on a consistent basis, even in times of drought or other constraints on source water availability. By avoiding the use of potable water for non-potable uses, the NBWRP will improve water supply reliability in the NBWRA service areas. The availability of imported water is subject to climatic changes (i.e., drought) and other unforeseen events such as earthquakes and floods. Further, there are few opportunities for further development of groundwater or local surface water supplies within the area.

The project will reduce the problem of ground water over-drafting in the MST groundwater basin in Napa County. Economic benefits that are difficult to qualify include the reduced need in the future for property owners to dig deeper wells to access groundwater. Other economic benefit includes an increased stability in housing and other property prices resulting from a more stable potable water supply.

Although interest in water supply reliability is increasing (e.g., due to increasing water demands and concerns over climate-related events), only a few studies have directly attempted to quantify its value (i.e., through non-market valuation studies). The results from these studies indicate that residential and industrial customers seem to value supply reliability quite highly. Stated preference studies find that water customers are willing to pay $95 to $500 per household per for total reliability (i.e., a 0 percent probability of their water supply being interrupted in times of drought).

For most studies, this is what households would be willing to pay in addition to their current water bill. The challenge in using these values to determine a value of increased reliability as a result of the proposed project is recognizing how to reasonably interpret these survey-based household monetary values. The values noted above reflect a willingness to pay per household to ensure complete reliability (zero drought-related use restrictions in the future), whereas this recycled water project enhances overall reliability, but does not guarantee 100 percent reliability. Thus, if applied directly to the number of households in the NBWRP service areas, the dollar values from the studies would overstate the reliability value provided by the NBWRP. Due to the uncertainty involved in applying these numbers to this situation, this benefit estimate is not quantified.

Fertilizing compounds commonly contained in recycled water are typically not found in potable water (e.g., nitrogen, phosphorous, and potassium). Thus the use of recycled water for irrigation will reduce fertilizer costs associated with lands that will be serviced by the NBWRP.

Recycled water will be delivered to the Napa-Sonoma Salt Ponds via the Salt Marsh Pipeline from SVCSD's reclamation system as an ongoing supply of non-saline water for restoration, with subsequent agricultural use. Many of the social benefits, including adherence to a widely shared "environmental ethic" for recycling and the use of "green" approaches to local resource management challenges cannot be easily monetized. Social benefits can be more tangible. For example, recycled water yields are not linked to the hydrologic cycle and annual precipitation patterns; instead, the yield from recycled water is driven by a stable supply of regionally generated wastewater. As a climate-independent water supply option, recycled water offers some added economic reliability values to the region compared to traditional sources that depend on snow pack, precipitation, and storage Environmental benefits can include many of the ecological services and values associated with enhanced stream flows, improved instream water quality, and lower summertime water temperatures. These options help to:

- Avoid increased groundwater pumping costs;
- Protect source water for water providers;
- Enhance downstream water bodies from increased streamflow;
- Benefit riparian and aquatic species with increased streamflow;
- Reduce seawater intrusion;

- Increase in-stream and near-stream recreation;
- Leverage water projects with other community projects;
- Provide local control over water resources; and
- Increase demonstration of "green ethic."

Evaluation Criterion 6: Reclamation's Obligations and Benefits to Rural or Economically Disadvantaged Communities

Subcriterion No. 6a: Legal and Contractual Water Supply Obligations

10 points

Points will be awarded for projects that help to meet Reclamation's legal and contractual obligations.

1. Does the project help fulfill any of Reclamation's legal or contractual obligations such as providing water for Indian tribes, water right settlements, river restoration, minimum flows, legal court orders, or other obligations? Explain.

The NBWRA member agencies non-recycled water supplies are not Reclamation-controlled rivers or facilities. However, the environmental restoration benefits of this project are the same as on Reclamation-controlled rivers where similar obligations are found.

Subcriterion No. 6b: Benefits to Rural or Economically Disadvantaged Communities

10 points

Points will be awarded based on the extent to which the project serves rural communities or economically disadvantaged communities in rural or urban areas.

1. Does the project serve a rural or economically-disadvantaged community? (A rural community is defined as a community with fewer than 50,000 people.)

The project does not serve rural or economically-disadvantaged communities.

2. Are any economically-disadvantaged communities within the project sponsor's service area?

There are no economically disadvantaged communities within the project sponsor's service area.

Evaluation Criterion 7: Watershed Perspective

15 points

Points will be awarded based on the extent to which the project promotes or applies a watershed perspective by implementing an integrated resources management approach, implementing a regional planning effort, or forming a collaborative partnership with other entities.

A watershed perspective generally means an approach to planning directed at meeting the needs of geographically dispersed localities across a region or a watershed that will take advantage of economies of scale and foster opportunities for partnerships. This approach also takes into account the interconnectedness of water and land resources, encourages the active participation of all interested groups, and uses the full spectrum of technical disciplines in activities and decision-making.

1. Does the project implement a regional or State water plan or an integrated resource management plan? Explain.

Yes. The NBWRP is a watershed-based, regional recycled water program authorized for construction by Congress. The San Francisco Bay Area has a long history of regional cooperation in water resources management. In 2004, with the advent of State of California bond measures aimed at promoting a new model of integrated regional water management throughout California, Bay Area water, wastewater, flood protection, and stormwater agencies, cities and counties represented by the Association of Bay Area Governments, and water management interests represented by the State Coastal Conservancy and non-governmental environmental organizations signed a Letter of Mutual Understandings, detailing their intent to develop the San Francisco Bay Area Integrated Regional Water Management Plan (IRWMP) for the nine-county Bay Area.

Given the large geographic scope of the Bay Area region and the wide range of water management strategies being implemented, original development of the IRWMP was approached as a two-step process. Four water management service areas were established for the region: Water Supply and Water Quality, Wastewater and Recycled Water, Flood Protection and Stormwater Management, and Watershed Management and Habitat Protection and Restoration. Each of these four Functional Areas developed a comprehensive "Functional Area Document" in order to identify specific needs and challenges relating to the specific Functional Area, describe water management strategies and approaches to address these needs, and develop an initial list of potential strategies and implementation projects that would maximize benefits and enhance opportunities for regional cooperation within a given Functional Area. Next, the four Functional Area Documents were integrated, culminating in the development of the San Francisco Bay Area IRWMP, which was adopted in December 2005. The San Francisco Bay Area Regional Water Management Group is governed by the San Francisco Bay Area IRWMP Coordinating Committee (CC), and the San Francisco Bay Area IRWMP received California Department of Water Resources approval under the 2009 Regional Acceptance Process. Through the IRWMP effort, the CC and participating entities established priorities for regional implementation through a collaborative planning process. The CC has used this process to identify projects for implementation, taking into consideration the evolving needs of the regional, which include the need to increase water supply reliability to adapt to potential long-term drought conditions and other climate change impacts, among others.

Through this collaborative process, the CC identified five high priority regional programs for implementation and inclusion in their proposal for multiple Proposition 84 Implementation Grant funding. The NBWRP Phase 1 projects are an element of the Bay Area IRWMP's Regional Recycled Water Program. The Regional Recycled Water Program was the largest program and represents one of the best strategies of addressing long-term drought preparedness.

The NBWRP is critical to implementing the regional integrated plan. In combination with State funding, it is key to advancing the overall regional plans and goals identified in the Bay Area IRWMP. In 2011, the NBWRA wastewater agencies were awarded $2,500,000 for the Phase 1 projects through Proposition 84 Implementation Grant funding.

In 2012, the CC began the 2013 Bay Area IRWMP Update. As part of the document update, all Bay Area water projects had to submit a new project description to be reviewed and

scored for incorporation into the 2013 IRWMP. The required information included the project need, a detailed project description, costs, schedule, project partnerships, watershed benefits, water supply benefits, and water quality benefits. The CC ranked the NBWRP as number one out of more than 300 projects in the Bay Area, recognizing the NBWRP as a model project for integrated water planning in the Bay Area. The NBWRP was also awarded $1,020,000 from Round 2 of Proposition 84 Implementation Grant and $2,000,000 in funding from the 2014 Drought Grant Solicitation.

2. Does the project promote collaborative partnerships to address water-related issues? Explain.

The North San Pablo Bay region of California's Napa, Sonoma, and Marin Counties faces serious long-term challenges in providing reliable water supplies. The area is not served by state or federal water projects, surface and groundwater sources are limited, and some local groundwater basins are over drafted. Urban, agricultural and environmental demands, exacerbated by ongoing drought, exceed the region's ability to provide a reliable, sustainable and economical water supply. A clean, dependable water supply is also needed to continue the restoration of vital tidal wetlands at the base of the San Pablo Bay watershed. The effects of climate change are further stressing the area's water supplies with reduced diversions from the Russian River, unpredictable rainfall, and fluctuating temperatures.

The region's wastewater treatment agencies have long faced strict limits on the timing and quality of the treated effluent they can send to San Pablo Bay. By treating wastewater to the strict levels required for reuse, these agencies can recycle the water in productive ways that augment local water supply and help protect limited potable water resources. Many studies conducted over the last decade have verified its safety and recycled water is already in wide use throughout the North Bay, elsewhere in California and across the nation.

The NBWRA agencies joined together with a goal to investigate the feasibility of distributing treated wastewater for agricultural, urban and environmental uses and optimize the value of recycled water both in their own communities and throughout the North Bay. The NBWRP projects provide a new, sustainable local water supply while demonstrating responsible approaches that provide numerous economic and environmental benefits for the region, including:

- A reliable, new water supply for the region's vineyards and agriculture;
- An alternative water supply for irrigation of parks, golf courses and, public landscaping;
- Increased water for restoration of wetlands and improved in-stream flows for riparian habitat and fisheries recovery;
- Reduced demand on limited local surface and groundwater supplies;
- Less discharge of treated wastewater into the Bay;
- Reduced demand on imported Russian River water; and
- Leveraged, cooperative funding opportunities through regional agency partnering.

Since the NBWRP was conceived over 10 years ago, the NBWRA has made considerable headway in its implementation of the Program vision. It has launched and completed essential multi-phase technical and economic feasibility studies, conducted a broad stakeholder outreach effort targeting both agencies and potential users of recycled water, and forged key partnerships to obtain and share funding resources.

The NBWRP addresses regional water issues by:

- Determining how it can make the region's recycled water supply provide as many benefits as possible to all stakeholders – urban, agricultural and environmental. Every aspect of the NBWRP is designed to provide multiple benefits and a sustainable supply of new water.
- Providing "drought resistant" recycled water for urban uses and irrigation of high value crops in the Napa, Sonoma and Marin County areas;
- Capturing high quality treated effluent to store and reuse for irrigation in the water short area of Napa, Sonoma, and Marin Counties;
- Developing dual-purpose facilities that provide increased capacity to store recycled water and provide waterfowl and wetland benefits;
- Providing recycled water to local agriculture that historically have dammed and diverted local streams for irrigation. By providing an alternative, reliable water supply for on farm use, natural riparian systems can once again flow into North San Pablo Bay.
- Preserving current land uses by providing recycled water for restoration of marsh and wetland areas on lands surrounding the North San Pablo Bay and through improvements to existing levees to meet habitat restoration goals and anticipated sea level rise; and
- Reducing the need for additional large pumping facilities to import water to meet local needs.

Although this region is not served by the federal water project, the NBWRP demonstrates how a long-term sustainable supply of recycled water can be developed by partnering with the Bureau of Reclamation, and the State of California, for planning and construction costs, while the local sponsors provide non-federal cost share and long-term maintenance.

The NBWRP is also a model for maximizing the benefits of limited water resources in the West. As each of the projects in the NBWRP are implemented, they will reduce demand on potable water across Marin, Sonoma, and Napa Counties while providing a sustainable long-term supply of recycled water for urban, agricultural, and environmental uses. This comprehensive regional program provides a sound approach toward meeting local, state, and federal water management objectives and regulatory requirements and helps put recycled water to it broadest, most beneficial use. Every aspect of the NBWRP is designed to provide multiple benefits and a sustainable supply of new water.

The NBWRA is a unique and successful collaboration and partnership that has served as a model for future large-scale water reuse programs. The NBWRP can readily be held up as one of the WaterSMART Initiative's Model Programs. It integrates the needs of urban users, agriculture and the environment into a program designed to virtually create new water. Through its reuse strategy, it utilizes high efficiency, energy conserving technology, funding partnerships to share costs, and project planning that ensures a long term sustainable water supply for the entire North San Pablo Bay Region.

The NBWRP is an example of regional-scale planning and implementation where the benefits of water reuse accrue on multiple levels. This approach allows partners to collaborate, identify and integrate diverse needs into water reuse programs. It allows for leveraging of non-Federal funding sources to provide local cost-share and local entities to realize benefits that would be out of their reach without regional collaboration. It also allows many projects to be included into larger programs that when implemented over time,

increase both program yield and community benefits while maximizing the value of the federal dollar invested.

Environmental Compliance

To allow Reclamation to assess the probable environmental impacts and costs associated with each application, all applicants must respond to the following list of questions focusing on the requirements of the NEPA, ESA, and NHPA. Please answer the following questions to the best of your knowledge. If any question is not applicable to the project, or if necessary environmental compliance has been completed, please explain.

1. Will the project impact the surrounding environment (i.e., soil [dust], air, water [quality and quantity], animal habitat, etc.)?

Please briefly describe all earth-disturbing work and any work that will affect the air, water, or animal habitat in the project area.

The NBWRP Phase 1 projects include construction of recycled water pipelines, pump stations, and reservoirs. Construction would result in short term impacts to air quality relating to construction emissions; however, these impacts would be reduced to less than significant through the implementation of mitigation measures identified in the NBWRA North Bay Water Recycling Program EIR/EIS. The projects would be implemented in conformance with Bay Area Air Quality Management District (BAAQMD) Requirements. Project construction would have the potential to result in short-term impacts to water quality related to disturbance of the construction corridor; these impacts would be reduced to less than significant through compliance with National Pollutant Discharge Elimination System (NPDES) General Permit for Construction Activities, which require preparation and implementation of a Storm Water Pollution Prevention Plan implementing Best Management Practices to protect water quality. Project implementation would have the potential to affect aestivation habitat for California red-legged frog; however, pre-construction clearance and provision of compensatory mitigation in September 2011, as established in the NBWRA Program's USFWS Biological Opinion, fully offset this temporary impact. The Draft and Final EIR/EIS documents are available at the NBWRA webpage: http://nbwra.org/docs/. The MMRP is too large to include in this application package; however, the NBWRA is happy to provide the MMRP if requested.

Please also explain the impacts of such work on the surrounding environment and any steps that could be taken to minimize the impacts.

The NBWRP's MMRP established mitigation to be implemented by the proposed project to reduce all environmental impacts to a less than significant level. The MMRP is organized in a tabular format, keyed to each mitigation measure incorporated into the project. The tables following each measure provide a breakdown of how the mitigation measure would be implemented, who would be responsible, and when it would occur. The MMRP is too large to include in this application package; however, the NBWRA is happy to provide the MMRP if requested.

2. Are you aware of any species listed or proposed to be listed as a Federal endangered or threatened species, or designated Critical Habitat in the project area? If so, would they be affected by any activities associated with the proposed project?

Please see above discussion regarding California red legged frog. Additionally, all stream channels capable of supporting habitat for central coast steelhead and freshwater shrimp would be avoided through pipeline construction using trenchless technology, such that impacts would be avoided.

3. Are there wetlands or other surface waters inside the project boundaries that potentially fall under Federal Clean Water Act jurisdiction as "waters of the United States?" If so, please describe and estimate any impacts the project may have.

The NBWRP Phase 1 projects were specifically designed to avoid impacts to waters of the United States through use of pipeline construction using trenchless technology for individual stream crossings. As such, potential impacts to wetlands and surface water have been minimized.

4. Are there any known archeological sites in the proposed project area? If so, please describe and estimate any impacts the project may have.

There are known archeological sites that have the potential to occur within the Area of Potential Effect (APE). Subsurface investigations, including collection of coring samples, have been completed at these locations to confirm that pipeline installation would not adversely affect known archaeological sites within the APE. See the documentation of Section 106 consultation included in Attachment B for more detail.

5. Will the project have a disproportionately high and adverse effect on low income or minority populations? If so, please describe and estimate any impacts the project may have.

No. The project would not affect locations that have a disproportionately high or adverse effect on low income or minority populations. Census track data indicates that minorities are less than 50 percent of the population, and would not be disproportionately affected.

6. Will the project limit access to and ceremonial use of Indian sacred sites or result in other impacts on tribal lands? If so, please describe and estimate any impacts the project may have.

No. Local Native American tribes have been consulted with as part of the Section 106 process, and the NBWRP includes a monitoring plan for known archaeological sites, and would not limit access to or ceremonial use of Indian sacred sites, or any other impacts on tribal lands.

7. Will the project contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area? If so, please describe and estimate any impacts the project may have.

The NBWRP recycled water system facilities would be installed primarily within roadways, existing treatment facilities, and agricultural areas; as such, the potential for spread of noxious weeds or non-native invasive species would be low.

Required Permits or Approvals

Applicants must state in the application whether any permits or approvals are required and explain the plan for obtaining such permits or approvals.

The NBWRA EIR/EIS covers the NBWRP Phase 1 projects. As part of its NEPA process, Reclamation was issued a USFWS Biological Opinion that covers all the NBWRP Phase 1 components. The Section 106 Consultation was completed in March 2011 (see Attachment B).

Novato Central Service Area Treatment Plant Expansion and Distribution Project

The following permits or approvals are needed for the Novato Central Service Area:

1. As noted above, NMWD has approved the EA/Addendum, and it is anticipated that the Bureau of Reclamation will complete it consultation and NEPA approval processes in December 2015. Permits and approvals that have been acquired, or are in the process of being acquired by NMWD are identified below.
2. National Historic Preservation Act Section 106 consultation [State Historic Preservation
3. Office (SHPO)].
4. Local City of Novato Roadway Encroachment Permit;
5. Sonoma Marin Area Rapid Transit (SMART) Encroachment Permit;
6. Caltrans Encroachment Permit;
7. Land Use Lease Amendment, State Lands Commission.

   Additional acquisition of rights-of-way (ROWs) and temporary construction easements may be necessary for construction of some of the proposed facilities. Temporary construction easements would also be required for contractor staging areas and equipment and materials storage.

No new permits or approvals are needed for the Novato Treatment Plant Improvements on the existing Novato SD site

Novato South Service Area/LGVSD-MMWD Recycled Water Project

The LGVSD-MMWD Recycled Water Project will require a County of Marin Encroachment Permit for potential work with in the county right-of-way between the LGVSD treatment plant and the existing MMWD clear well, which is also within county property.

SVCSD Wastewater Treatment Plant Improvement Project

A CAL/OHSA permit is needed for the SVCSD Wastewater Treatment Plant Improvement Project.

Project Budget Proposal

Description of Expenditures Planned through September 2018

The evaluation criteria listed in Section IV.D of this FOA will be applied to the entire authorized Title XVI project. Applicants must also provide a description of planning, design, and construction activities that are planned through September 30, 2018, including a description of activities that have previously been completed without Federal funding that are the basis for a request for Federal funding under this FOA. Applicants must also provide a cost estimate for these activities.

For the **Novato Central Service Area Treatment Plant Expansion and Distribution Project**, the following NMWD activities are anticipated to occur through September 2018:

- Engineering design of the project facilities – anticipated to be completed by January 2016.
- Solicitation of bids for construction – anticipated to occur February 2016.
- Award of construction and construction management contracts – anticipated to occur April - May 2016.
- Construction activities – anticipated to be completed May 2017.

Project	Project Cost	Previous Federal Funding Received	Additional Funding Requested
Novato Central Service Area (NMWD)	$11,930,000	$0	$2,750,000
Design	$454,800		
Construction	$9,031,500		
Construction Management	$1,061,200		
Administrative and legal expenses	$279,000		
Right of Way	$100,000		
Miscellaneous	$1,003,500		

For the **Novato Central Service Area Treatment Plant Expansion and Distribution Project** the following Novato SD activities are anticipated to occur through September 2018:

- Preliminary design tasks including selection of equipment and review of pre-treatment alternatives – anticipated to occur December 2015 through February 2016.
- Engineering design and plan preparation – anticipated to occur March through November 2016.
- Solicitation of bids for construction, combined with additional WWTP improvements – anticipated to occur December 2016 through January 2017.
- Award of construction contracts for project – anticipated to occur February 2017.
- Construction activities – anticipated to occur February 2017 through November 2017.

Project	Project Cost	Previous Federal Funding Received	Additional Funding Requested
NSD RWF Phase 1 Expansion Project	$2.018,000	$0	$500,000
Design	$219,0000		
Construction	$1,270,000		
Construction Management	$146,000		
Administrative and legal expenses	$135,000		
Contingencies	$237,000		

For the **LGVSD-MMWD Recycled Water Project**, the following activities are anticipated to occur through September 2018:

- Preliminary design tasks including selection of equipment and review of pre-treatment alternatives – anticipated to occur November 2015 through January 2016.
- Engineering design and plan preparation – anticipated to occur January through October 2016.
- Solicitation of bids for construction, combined with additional WWTP improvements – anticipated to occur October through November 2016.
- Award of construction contracts for project – anticipated to occur November 2016.
- Construction activities – anticipated to occur November 2016 through September 2017.

Project	Project Cost	Previous Federal Funding Received	Additional Funding Requested
LGVSD-MMWD Recycled Water Project (LGVSD & MMWD)	$5,424,000	$0	$847,150
Design	$319,000		
Construction	$4,682,000		
Construction Management	$398,000		
Administrative and legal expenses	$25,000		

For **SVCSD Wastewater Treatment Plant Improvement Project**, the following activities are anticipated to occur through September 2018:

- Engineering design of the project facilities, – anticipated to be completed by May 2016.
- Solicitation of bids for construction – anticipated to occur May 2016.
- Award of construction and construction management contracts – anticipated to occur August 2016.
- Construction activities – anticipated to be completed April 2017.

Project	Project Cost	Previous Federal Funding Received	Additional Funding Requested
SVCSD Wastewater Treatment Plant Improvement Project	$3,118,800	$0	$750,000
Design	$502,100		
Construction	$2,153,200		
Project inspection fees	$260,700		
Administrative and legal expenses	$193,100		
Miscellaneous	$9,700		

SCWA anticipates performing the following activities in support of grant administration through September 2018 funded entirely by existing administration funding previously obligated:

- Execute financial assistance agreement with the Bureau of Reclamation – anticipated to occur between April and September 2016.
- Semi-annual financial and project reporting, SCWA program management, coordination with Reclamation – anticipated to be ongoing between through September 2018.

The SF-424 and SF-424Cs included in this application package show a federal funding request of $4,847,150, a total project cost of $22,490,800, and an eligible project cost of $19,388,600 to reflect the project cost represented by 25 percent Federal funding and 75 percent non-federal cost share..

Funding Plan

Please include the following chart (table 1) to summarize your non-Federal and other Federal funding sources for that portion of the project that will be completed by September 30, 2018. Denote in-kind contributions with an asterisk (*).

See the table below for a summary of funding sources for the NBWRP Phase 1 project components requesting federal funds through this funding opportunity.

Table 1. Funding Sources

Funding Sources	Funding Amount					
	Novato Central Service Area NMWD	Novato Central Service Area Novato SD	LGVSD/MMWD Recycled Water Project	SVCSD WWTP Improvements	Grant Administration	Total
Non-Federal Entities						
Cash on Hand	$775,000	$1,518,000	$0	$2,368,800	$0	$4,661,800
State Funding	$8,405,000	$0	$4,576,850	$0	$0	$12,981,850
NBWRA Member Agency Trust*	$0	$0	$0	$0	$0	$0
Non Federal Subtotal:	$9,180,000	$1,518,000	$4,576,000	$2,368,800	$0	$17,643,650
Other Federal Entities – Previous Reclamation Funding through ARRA and WaterSMART Grants	$0	$0	$0	$0	$0	$0
Other Federal Subtotal:	$0	$0	$0	$0	$0	$0
Requested Reclamation Funding Through This Funding Opportunity:	$2,750,000	$500,000	$847,150	$750,000	$0	$0
Total Project Funding	$11,930,000	$2,018,000	$5,424,000	$3,118,800	$0*	$22,490,800

* $0 dollars in additional funding. SCWA will utilize funds previously obligated under other NBWRP Phase 1 sub-projects to conduct all administrative tasks related to these project, as well as, final cooperative agreement closeout.

In addition to the Funding Plan noted in Table 1, please provide information specific to funds expended to date for the entire project scope and proposed expenditures through September 2018 that notes both Federal and non-Federal funds.

The NBWRP is a model for maximizing the benefits of limited water resources in the west. By partnering on the local level, agencies and elected officials are developing solutions to meet broad constituent needs. This comprehensive regional program provides a sound, viable approach toward meeting local, state and federal water resource management objectives and regulatory requirements. By establishing a partnership of local, state and federal

agencies with similar mandates, the NBWRP develops cost-saving economies of scale and qualifies for access to state and federal funding sources.

The NBWRP has been authorized for $25 million in federal funding. At this time, the NBWRP has received $20,152,850 in federal funding through ARRA, WaterSMART, and Title XVI Grants. The NBWRP Phase 1 projects have also been awarded $5,886,800 in funding through California Proposition 50 and 84 grants. Local funds have been used to make up the balance of expenditures.

The table below presents NBWRP Phase 1 expenditures through September 2015, and the balance of funds available for the Phase 1 projects through September 2018.

Project	Participating Agencies	Project Expenditures through September 2015					Existing Title XVI Grant Funding	Remaining Funds to be Utilized through September 2018			
		Local Funds	ARRA Funds	Title XVI Funds	California State Grants	Total Expenditures		Proposed 2016 WaterSMART Grant	Remaining Title XVI Funds to be Authorized	Local Funds	Total
Novato South	LGVSD & NMWD	$8,778,033	$1,388,000	$1,677,875	$625,000	$12,476,908	$0	$847,150	$0	$4,576,850	$5,424,000
Novato North	Novato SD & NMWD	$8,976,483	$2,600,000	$0	$625,000	$12,201,483	$0	$0	$0	$0	$0
Novato Central	NMWD	$0	$0	$0	$0	$0	$0	$2,750,000	$0	$9,180,000	$11,930,000
Novato Central	Novato SD	$0	$0	$0	$0	$0	$0	$500,000	$0	$1,518,000	$2,018,000
Sonoma Valley Recycled Water Project	SVCSD	$7,326,401	$1,702,500	$1,383,775	$2,011,800	$12,424,476	$930,977	$750,000	$0	$5,161,730	$6,842,707
Salt Marsh Project	SVCSD										
MST Project & Napa State Hospital Project	Napa SD & Napa County	$21,108,650	$1,512,500	$6,339,226	$2,625,000	$31,585,376	$2,492,997	$0	$0	$7,478,991	$9,971,988
TOTAL		$46,189,566	$7,203,000	$9,400,876	$5,886,800	$68,680,242	$3,423,974	$4,847,150	$0	$27,915,571	$36,186,694

Appendix A: NBWRP Record of Decision

RECLAMATION

Managing Water in the West

North San Pablo Bay Restoration and Reuse Program
Final Environmental Impact Statement

Record of Decision

January 2011

U.S. Department of the Interior
Bureau of Reclamation
Mid-Pacific Region
Sacramento, California

I. Introduction

This Record of Decision (ROD) documents the decision of the Department of the Interior (DOI), Bureau of Reclamation, Mid-Pacific Region for the North San Pablo Bay Restoration and Reuse Program (Program or Project) located in northern California. The Program is the subject of the North San Pablo Bay Restoration and Reuse Program Environmental Impact Report/Environmental Impact Statement (EIR/EIS), developed in compliance with the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA). Reclamation filed the Final EIS (FEIS) with the Environmental Protection Agency (EPA) on June 8, 2010. The proposed federal action is the provision of federal funds by Reclamation under Title XVI of Public Law (P.L.) 102-575, as amended (Title XVI), to the Sonoma County Water Agency (SCWA), which is the administrative agency for the North Bay Water Reuse Authority (NBWRA). SCWA will distribute federal funds to other NBWRA members and cooperating agencies (Member Agencies) for the implementation of multiple projects examined in the EIR/EIS. This ROD is based upon the FEIS and other information in the administrative record.

The purpose of the Program is to create a regional wastewater reuse program with component projects to provide recycled water for agricultural, urban, and environmental uses as an alternative to discharging treated wastewater to San Pablo Bay. The purpose of this ROD is to explain the decision rationale and factors considered, describe the proposed action and alternatives, including mitigation measures, and the monitoring and enforcement program for the adopted mitigation measures.

II. Background

Program Location and Non-Federal Implementing Agencies

The NBWRA, comprised of multiple wastewater utilities and one water agency in the North San Pablo Bay region of California (*i.e.*, Marin, Sonoma, Napa, and Solano Counties), plans to expand the use of recycled water in order to improve water supply reliability and reduce treated effluent discharge into San Pablo Bay with this long-term, multi-agency program. The Program area encompasses approximately 318 square miles of land in Marin, Sonoma, and Napa Counties. Participants include, but are not limited to, Las Gallinas Valley Sanitary District (LGVSD), Novato Sanitary District (Novato SD), Sonoma Valley County Sanitation District (SVCSD), and Napa Sanitation District (Napa SD). In addition, North Marin Water District (NMWD) and the County of Napa are participating financially and providing support. Sonoma County Water Agency is the Lead Agency under CEQA.

Federal Authority and Federal Lead Agency

The investigation and development of the Program is being carried out in conformance with Title XVI, which provides authority for federal participation and cost-sharing in water reuse and recycling projects. Reclamation is the federal lead agency under NEPA.

Program Purpose and Benefits

The communities of the North San Pablo Bay region are experiencing both water supply and quality issues. Surface and groundwater supplies are limited and highly coveted by competing interests, and some local groundwater basins are over-drafted. If managed properly, recycled water can supplement and augment local water supplies on a regional basis by providing water that meets agricultural and municipal non-potable quality needs.

The purpose of the Program is to provide recycled water for agricultural, urban, and environmental uses and to promote the expanded, beneficial use of recycled water in the North San Pablo Bay region.

Wastewater utilities face strict regulatory limits on the timing, volume, and quality of the treated wastewater they can discharge to San Pablo Bay, as well as the rivers and streams that flow to it. Implementation of the Program would include wastewater treatment upgrades and construction of pipelines, pump stations, and storage facilities to distribute recycled water. All recycled water will be used in compliance with Article 4 in Title 22 of the California Code of Regulations, which sets water quality standards and treatment reliability criteria for recycled water. By treating wastewater to the stricter regulatory levels required for reuse, the Member Agencies can recycle the water productively to address water supply needs and to reduce the amount released to San Pablo Bay and its tributaries.

By providing a secure, reliable recycled water supply, the Program will accomplish at least three benefits: continuing the restoration of San Pablo Bay tidal wetlands and tributaries that contain habitat for endangered and threatened species; reducing the use of natural regional surface and groundwater supplies; and reducing wastewater discharge to regional waterways and San Pablo Bay. Because the Program will be implemented by multiple regional entities working in concert to address shared problems and to achieve collective goals, the Program is anticipated to create a cost-effective supplemental water supply that will have minimal long-term costs to local customers.

Program Objectives

The Program objectives are to:

- 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
- Implement recycled water facilities in an economically viable manner

III. Alternatives Considered

The EIR/EIS considered three action alternatives analyzed at a program level, a No Action Alternative, and a No Project Alternative. Phase 1 of Alternative 1 was analyzed at a project-specific-level. Action Alternatives were formulated to meet the purpose, objectives, and need summarized in Section II, *supra*. Each action alternative consists of treatment, transmission, and storage facilities necessary to meet a range of recycled water demand and facility integration scenarios within the North San Pablo Bay area through 2020. The alternatives considered in detail in the EIR/EIS are discussed below.

No Project Alternative

Under the No Project Alternative, existing conditions and reasonably foreseeable future conditions that would exist if the project was not constructed are examined pursuant to CEQA. Under the No Project Alternative, the NBWRA would not implement construction of facilities identified under the Preferred Alternative to provide a reliable recycled water distribution system throughout the North San Pablo Bay area.

Implementation of the No Project Alternative would avoid the construction-related impacts and operational impacts identified for the proposed project. Existing potable supplies of water would not be supplemented; the volume or quality of treated effluent discharges to North San Pablo Bay tributaries would not be improved; environmental benefits would not be provided; and a local, sustainable, and energy efficient supplemental water supply would not be utilized. Therefore, over the next 10-20 years, current and future water demands would increase pressure on both current water supplies and water delivery systems.

No Action Alternative

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 alternative, pursuant to NEPA. The No Action Alternative assumes no joint project among the Member Agencies and no Federal funding. Additional wastewater treatment capacity and water recycling would occur strictly from individual agencies implementing their own local plans independent of other agencies. Because development of supplemental water supplies would continue to be a regional challenge, the No Action Alternative would likely result in a small increment of water recycling projects within the region. Without Federal funding, the non-Federal share of each project cost would be 100 percent, not 75 percent; therefore, each project would result in increased service rates for individual customers.

Because construction would occur under the No Action Alternative, there would still be impacts to biological resources, cultural resources, and construction-related air quality and noise, though none as great in magnitude or duration as under an Action Alternative or the Preferred Alternative. Implementing the local, independent projects would result in small, limited biological and socioeconomic impacts, but none as significant as under an Action Alternative or the Preferred Alternative.

Although the magnitude and duration of impacts would be of a smaller scale compared to an Action Alternative or the Preferred Alternative, implementing the No Action Alternative would fail to substantially: supplement existing potable supplies of water; beneficially alter the volume or quality of treated effluent discharges to North San Pablo Bay tributaries; provide any environmental benefits; or take advantage of a local, sustainable, and energy efficient supplemental water supply. Therefore, over the next 10-20 years, current and future water demands would continue to increase pressure on both current water supplies and water delivery systems.

Alternative 1: Basic System (Preferred Alternative)

The Preferred Alternative would achieve the Program's purpose and specific objectives summarized in Section II, *supra*, by providing recycled water for agricultural, urban, and environmental uses that would both improve regional water supply reliability and reduce wastewater discharge to regional waterways and San Pablo Bay.

The Preferred Alternative would provide 6,655 acre-feet per year (AFY) of recycled water for irrigation use and 5,825 AFY for habitat restoration. It would include installation of approximately 83 miles of new pipeline, construction of facilities onsite at existing wastewater treatment plants (WWTP) to provide an additional 7.8 million gallons per day (mgd) of tertiary treatment capacity, and development of approximately 1,020 acre feet (AF) of new storage, primarily at existing or planned storage ponds at the WWTPs.

The Preferred Alternative would be implemented in multiple phases. This ROD covers activities collectively referred to in the EIR/EIS as Phase 1, summarized in Table 1 and the following project descriptions. Phase 1 will provide 2,883 AYF of recycled water for irrigation use. Site specific analysis of any additional activities to be conducted under future, additional phases would be analyzed pursuant to NEPA if Federal funding were involved.

Table 1
Phase 1 Facilities

		New Pipeline (miles)	New Demand (AFY)	Capacity Increase (mgd)	New Pumps (HP)	New Storage (AF)
LGVSD	Peacock Gap	--	--	--	--	--
LGVSD	NMWD URWP (South)	5.9	204	0.7	72	(3)
LGVSD	Sears Point	--	--	--	--	--
Novato SD	NMWD URWP (North/Central)	9.8	542	1.2	259	(3)
Novato SD	Sears Point	--	--	--	--	--
SVCSD	Southern Sonoma Valley	--	--	--	--	--
SVCSD	Central Sonoma Valley	--	--	--	--	--
SVCSD	(Sonoma Valley (1A)[1]	(5.2)	(874)	0	662	65
SVCSD	Napa Salt Marsh	7.9	(2)	0	0	0
Napa SD	Carneros East	--	--	--	--	--
Napa SD	Milliken-Sarco-Tulucay Area	17.5	2,137	4.5	880	0
Napa SD	Napa (local)	--	--	--	--	--
Napa SD	Napa Salt Marsh	--	--	--	--	--
Total [4]		41.1 (46.3)	2,883 (3,757)	6.4	1,873	65

1. Sonoma Valley (1A) 5.2 mile pipeline and pumping capacity examined in EIS, but is no longer proposed for implementation under Phase 1 due to cultural resource constraints on the pipeline route. It is included in this table to maintain consistency with the EIS Phase I Program. Storage and pumping facilities at the SVCSD WWTP would still be implemented. Please refer to Section VI Decision, Table 2, for Final Phase 1 Implementation Plan.
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.
4. Miles and AFY in parenthesis include Sonoma Valley 1A pipeline.

Las Gallinas Valley Sanitary District/North Marin Water District: Novato South Service Area – Hamilton Field

LGVSD would upgrade the existing LGVSD WWTP to 0.7 mgd tertiary capacity and would construct a pipeline distribution system to serve recycled water to the Hamilton Field area.

Novato Sanitary District/North Marin Water District: Novato North Service Area

Novato SD and NMWD would increase the existing Novato Recycled Water Treatment Facility to 1.2 mgd tertiary capacity; install a booster pump; rehabilitate the existing Plum Street Tank to store recycle water; connect the current pipeline distribution system to the rehabilitated Plum Street Tank; and construct two pipeline distribution systems to serve recycled water: one toward San Marin Drive and a second to the Valley Memorial Park Cemetery.

Novato Sanitary District/North Marin Water District: Novato Central Service Area

Novato SD and NMWD would decommission and relocate the existing recycled water treatment facility to the Novato SD WWTP, and construct two pipeline distribution systems to serve recycled water: one for Novato High School and other irrigated playing fields, and a second for urban users west of Highway 101.

A new pipeline would connect the WWTP with the North Service Area pipeline in Olive 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.

Sonoma Valley Recycled Water Project (SVRWP)
SVRWP would increase storage capacity at the existing SVCSD WWTP and increase pumping capacity for distributing recycled water. A pipeline distribution system to serve recycled water in western Sonoma Valley that was included in the EIS/EIR will not be implemented as part of Phase 1.

Sonoma Valley County Sanitation District: SVCSD Napa Salt Pond Pipeline
SVCSD would construct a recycled water distribution pipeline from the SVCSD WWTP to existing SVCSD storage reservoirs and to Napa Salt Marsh Ponds 7 and 7A for habitat enhancement.

Napa Sanitation District: Milliken-Sarco-Tulucay (MST) Area Project
Napa SD would install five booster pump stations, a pipeline distribution system to serve recycled water to the MST Area. Potential recycled water users include the Napa State Hospital, the Napa Valley Country Club, and agricultural and residential parcels.

Alternative 2: Partially Connected System

The Partially Connected System represents the median alternative. Each local agency would prioritize its own projects. Additional local projects include the Peacock Gap Golf Course area, further development of the NMWD Urban Reuse Project, the SVRWP, and projects in Napa MST area and the Carneros East areas. Interconnectivity between WWTPs would be expanded between Novato SD and LGVSD to serve the Sear's Point Area, as well as a connection between SVCSD and Napa SD WWTPs. The Partially Connected System would provide 11,250 AFY of recycled water for irrigation use and 2,933 AFY for habitat enhancement. Under this alternative, SVCSD would implement a system consisting of installation of 139 miles of new pipelines, construction of facilities onsite at the existing WWTPs to provide 15.9 mgd of tertiary treatment capacity, and approximately 2,220 AF of storage, primarily at existing or planned storage ponds at the WWTPs.

In most cases, the impacts for the Partially Connected System would be greater than the impacts under the Basic System. Although most significant impacts would be mitigated to a less-than-significant level, the Partially Connected System would require more infrastructure than the Basic System, and therefore result in more construction-related impacts.

Alternative 3: Fully Connected System

The Fully Connected System would maximize the local and regional reuse of recycled water, and, incrementally, would have the greatest facility requirements and costs of the three alternatives considered. It would include all of the components described under the Partially Connected System in addition to pipelines to extend service and connect all four WWTPs. The Fully Connected System requires a total of 153 miles of conveyance pipeline, construction of facilities onsite at the existing WWTPs to provide an additional 20.8 mgd of tertiary treatment capacity, and development of approximately 2,220 AF of storage, primarily at existing or planned storage ponds at the WWTPs. The Fully Connected System would provide 12,761 AFY of recycled water for irrigation use and 3,085 AFY for habitat enhancement.

The Fully Connected System would reduce the maximum amount of discharge to the San Pablo Bay, offset the maximum amount of groundwater pumping, and provide the maximum amount of recycled water use. However, the Fully Connected System could result in adverse impacts to existing drainage patterns and storm water flow, as well as temporary construction-related impacts to water quality.

Environmentally Preferable Alternative

The Environmentally Preferable Alternative is the alternative that best promotes the national environmental policies expressed in NEPA. The environmentally preferable alternative is the alternative that attains the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences, causes the least damage to the environment, and best protects natural and cultural resources.

In general, all the three Action Alternatives would meet the stated project objectives and provide environmental benefits by offsetting surface and groundwater use, reducing the need to develop additional water supplies, and reducing discharge to San Pablo Bay. In contrast, neither the No Project Alternative nor the No Action Alternative would offset the use of potable water supplies at the level provided under the Action Alternatives; nor would there be a substantial change in the amount of treated effluent discharged to tributaries to North San Pablo Bay. Implementation of the Preferred Alternative would generate 6,655 AFY of recycled water.

Most of the adverse environmental impacts would be associated with facility construction and activities. The Preferred Alternative requires construction of the least amount of infrastructure among the action alternatives and relies on the use of existing facilities by rehabilitating reservoirs and using ponds at the WWTPs; therefore, it would result in less construction-related impacts relative to the other Action Alternatives. Although the Preferred Alternative would produce a smaller amount of recycled water relative to the other Action Alternatives, it represents the most economically feasible and least environmentally damaging alternative. Implementing the Preferred Alternative would cost 80 percent less than the Partially Connected System, and 200 percent less than the Fully Connected System.[1]

[1] Camp Dresser McKee, Inc. , Phase 3 Engineering and Economic/Financial Analysis Report, June 2008.

There would be no direct significant and unavoidable impacts associated with the Preferred Alternative. The EIR/EIS recommends measures to mitigate any direct significant impacts to a less-than-significant level; Member Agencies adopted these measures as conditions of project approval. Based on the comparison of environmental effects in the FEIS, the Preferred Alternative is the environmentally preferable alternative.

IV. Decision

After consideration of the analysis in the EIR/EIS, related Biological Opinion (BO) from the U.S. Fish and Wildlife Service (FWS), and other pertinent information in the administrative record, Reclamation has decided to approve, and partially fund Phase 1 of the Preferred Alternative, as summarized above and described in detail in the administrative record. All NBWRA Member Agencies are required to comply with all required mitigation set forth in Attachment A: Mitigation Monitoring and Reporting Program (MMRP), and the terms and conditions in the FWS BO. The allocation of federal funds for the design, planning, and construction of the Project under Title XVI of P.L.102-575, Title XVI, Section 1619, as amended, is subject to availability of Federal funds and the Member Agencies remaining in compliance with all applicable State and Federal rules, regulations, and decisions.

Basis of Decision, Issues Evaluated, and Factors Considered

Reclamation's decision to approve Phase 1 of the Preferred Alternative is based upon the evaluation of the alternatives discussed in the EIR/EIS and related mitigation measures and/or commitments described in the following paragraphs and accompanying MMRP. Phase 1 of the Preferred Alternative meets the purposes and objectives stated in the EIR/EIS by advancing the following environmental benefits: continuing the restoration of San Pablo Bay tidal wetlands and tributaries that contain habitat for endangered and threatened species; reducing the use of natural regional surface and groundwater supplies; and reducing wastewater discharge to regional waterways and San Pablo Bay. Phase 1 of the Preferred Alternative advances Reclamation's mission to manage, develop, and protect water and related resources in an environmentally and economically sound manner, and includes steps to prevent, eliminate, and/or minimize damage to the environment.

Biological Resources

Federal Section 7 Endangered Species Act Consultation – National Marine Fisheries Service
On August 25, 2009, Reclamation submitted a Biological Assessment/Fisheries Biological Assessment (BA) to the National Marine Fisheries Service (NMFS) and requested Section 7 consultation. Based on best available information, on May 6, 2010, NMFS concurred with Reclamation's finding that Phase 1 of the Preferred Alternative is not likely to adversely affect Endangered Species Act (ESA)-listed species under the jurisdiction of NMFS.[2]

[2] Further consultation may be required if new information becomes available indicating that listed species or critical habitat may be affected by the project in a manner or extent not previously considered; current project plans change in a manner that cause effects to listed species or critical habitat in a manner or extent not previously considered; or a new species is listed or critical habitat designated that me be affected by the action.

Under the Fish and Wildlife Coordination Act (FWCA), Reclamation is required to consult with NMFS on projects that propose stream modification. NMFS has no FWCA recommendations for the Program regarding conservation of fish and wildlife resources because NMFS determined the Preferred Alternative contains adequate measures to protect aquatic habitat.

Federal Section 7 ESA Consultation – U.S. Fish and Wildlife Service
On August 25, 2009, Reclamation submitted the BA to the FWS and requested Section 7 consultation. On June 8, 2010, FWS issued the BO on Phase 1 of the Preferred Alternative.

Key terms and conditions, and minimization and avoidance measures in the BO include pre-construction surveys, monitoring, and compensatory mitigation for temporary impacts to California red-legged frog habitat and are listed below:

- Reclamation shall adhere to the Description of the Proposed Action through the NBWRA specific funding agreement (i.e., cooperative agreement). As providing Federal funds requires SCWA and other NBWRA Member Agencies to remain complaint with all pertinent rules, regulations, and permits (including the BO), the cooperative agreement requires that SCWA and other NBWRA Member Agencies receiving Federal funds will remain compliant with the avoidance and minimization measures of the BO.

- Construction activities will be confined to the dry season. No project-related activities will occur within 48 hours of precipitation. No project-related activities will occur from November 1 through April 31.

- All streams will be crossed using trenchless techniques.

- A qualified biologist, approved by the FWS (Service-approved biologist), will train all project staff regarding habitat sensitivity, identification of red-legged frogs, and these minimization and avoidance measures before the start of construction. All employees or contractors must complete this training prior to beginning any project-related work. A Service-approved biologist is defined as any person who has completed at least 4 years of university training in wildlife biology or a related science and/or has demonstrated field experience with red-legged frogs. The training must include the minimization and avoidance measures that are being implemented to avoid and minimize adverse affects to listed species as they relate to the project, the penalties for non-compliance, and the boundaries of the project area.

- Within 15 calendar days, prior to the onset of activities, the applicant shall submit the names and credentials of any biologists who would conduct activities specified in the following measures: No earthmoving or other project activities will begin until written approval from the Service has been received that the biologists are qualified to conduct the work.

- Within 15 calendar days, prior to the onset of activities and the start of construction, a Service-approved biologist will conduct pre-construction surveys for red-legged frogs. If listed species are found, the Service will be contacted and the Service-approved biologist will be allowed sufficient time to move any animal(s) from the work site to a safe location before

work activities begin. Only Service-approved biologists will participate in activities associated with the capture, handling, and monitoring of red-legged frogs. Any biologist involved with the surveying/handling will employ sterilization techniques appropriate to avoid the transmission of diseases to or from the site.

- A Service-approved biologist will be present at the work site until all California red-legged frog removal, work instruction, and habitat disturbance has been completed. After this time, the applicant or contractor will designate a person to monitor on-site compliance with all minimization measures. The Service-approved biologist will ensure that this individual receives the training outlined in minimization and avoidance measure number three and in the identification of the red-legged frog. The Service-approved biologist and on-site monitor will have the authority to and shall halt any action that might result in effects that exceed the levels anticipated by the Service during review of the proposed action. If work is stopped, the Service will be notified within 1 working day of the incident by the approved biologist or on-site biological monitor.

- Vehicle speed will be limited to 10 miles per hour within the project footprint.

- Vehicular traffic will be confined to existing roads, designated project staging areas, and the project footprint.

- To prevent inadvertent entrapment of listed species, all excavated steep-walled holes or trenches will be sufficiently covered at the end of each workday with plywood or similar materials that prevent entrapment of red-legged frogs. All holes will be inspected for entrapped red-legged frogs daily, prior to any work activities, and before any such trenches or holes are filled.

- Pipes measuring 4 inches or greater in diameter that are stored at the site will be sealed at each end to prevent any listed species from becoming trapped in such pipes.

- Before construction begins, the project engineer and a Service-approved biologist will identify locations for equipment, personnel access, and materials staging to minimize disturbance to red-legged frog habitat.

- All construction equipment must be in good working condition, showing no signs of fuel or oil leaks.

- All fueling and maintenance of vehicles and other equipment and staging areas shall occur at least 65 feet from any riparian or aquatic habitat.

- Machinery operators must have spill clean-up supplies on-site and be knowledgeable in their proper use and deployment.

- In the event of a spill, operators must immediately cease work, start clean-up, and notify the appropriate authorities.

- Erosion control fabric will consist of natural fibers that will biodegrade over time. No mesh erosion control fabric that contains mesh holes smaller than ¾ inch by 1½ inch will be installed. Only loosely woven jute, used to contain straw and prevent erosion, will be used.

- Prior to the close of the work window, temporarily disturbed areas will be revegetated with native species specific to the project location.

- No trash will be deposited on the site during construction activities. All trash will be placed in trash receptacles with secure lids or stored in vehicles, and removed at the end of each work day from the project site.

- Following construction, all construction debris will be removed from work areas.

- To compensate for the temporary disturbance of 22.32 acres of red-legged frog habitat, the applicant will purchase 2.25 acres of red-legged frog habitat credits from a Service-approved conservation bank. Credits will be purchased within 6 months of groundbreaking activities.

- Prior to initiating any groundbreaking activities at the SVRWP Service Area for the purpose of constructing the 24-acre water storage pond where a vineyard currently exists, red-legged frog protocol surveys will be conducted along 4,000 linear feet of Schell Creek, from 8th Street to San Louis Road. If evidence of the red-legged frog is found within this reach of Schell Creek, the applicant will compensate for the permanent loss of red-legged frog dispersal habitat by purchasing red-legged frog habitat credits from a Service-approved conservation bank at a ratio of 1:1.

- The NBWRA and its Member Agencies will not provide recycled water hookups from the proposed project for any land that is undeveloped on the date of signature of the BO (i.e., June 8, 2010), land that has not been converted to or planted with crops or other cultivated plants on the date of the signature of the BO (i.e., June 8, 2010), or any other property that would undergo land-use conversion as a result of the recycled water hookup, unless the development, land use conversion, or proposed land use is in compliance with the ESA. Compliance will be verified by one of the following: 1) authorization for incidental take issued by the Service via Section 7 or section 10 of the ESA; or 2) a letter from FWS indicating the development or land use conversion is not likely to adversely affect any listed species.

In addition, the BO also requires the member agencies to submit a post-construction compliance report prepared by the on-site biologist to the Sacramento Fish and Wildlife Office within 60 calendar days of the date of completion of construction activity. This report shall detail: 1) dates that construction occurred; 2) pertinent information concerning the success of the project in meeting the avoidance and minimization measures; 3) an explanation of failure to meet such measures, if any; 4) known project effects on the red-legged frog, if any; 5) occurrences of incidental take of these listed species, if any; 6) documentation of employee environmental education; and 7) other pertinent information.

Compliance with Other Regulations

NBWRA, its Member Agencies, and Reclamation are and shall continue to comply with all applicable federal rules, regulations, and decisions. NBWRA Member Agencies are pursuing or have acquired permit(s) for individual projects as appropriate, including permits from the United States Army Corps of Engineers authorizing the undertaking of the Preferred Alternative pursuant to Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403), Section 404 of the Clean Water Act (33 U.S.C. 1344), and Section 103 of the Marine Protection, Research, and Sanctuaries Act of 1972 (33 U.S.C. 1413). NBWRA Member Agencies are pursuing water quality certification(s) for individual projects, pursuant to Section 401 of the Clean Water Act from the State Water Resources Control Board and San Francisco Bay Regional Water Quality Control Board, as appropriate.

Pursuant to 36 CFR Part 800 (as amended 8-05-2004) regulations implementing Section 106 of the National Historic Preservation Act, Reclamation will consult with the State Historic Preservation Officer (SHPO) and other interested parties regarding Phase 1 of the Preferred Alternative's effects on historic properties. No ground disturbing activities will be initiated until Reclamation completes the Section 106 compliance process. In the event that unanticipated historic properties are discovered or affected after Reclamation completes the Section 106 compliance process, the NBWRA and its Member Agencies shall immediately notify Reclamation. In such an event, NBWRA and its Member Agencies shall follow the procedures identified in 36 CFR Part 800.13 (b), with Reclamation serving as the lead federal agency for any required Section 106 consultations.

Consideration of Environmental Impacts

As indicated in Section IV, *supra*, implementing Phase 1 of the Preferred Alternative would achieve the Project's purpose and specific objectives summarized above in Section II by providing recycled water for agricultural, urban, and environmental uses and to promote the expanded, beneficial use of recycled water in the North San Pablo Bay region. Based on the analysis presented in the EIR/EIS, the majority of impacts would result from construction activities. These are temporary impacts that can and will be mitigated through implementation of the mitigation measures identified in the EIR/EIS and MMRP.

As identified in the EIR/EIS, Phase 1 of the Preferred Alternative will have secondary effects that cannot be fully mitigated through project redesign or mitigation. These include secondary impacts related to implementing approved General Plans within the greater North San Pablo Bay area. Some of the impacts, such as incompatibility of land uses, air quality, noise, traffic issues, and loss of habitat and historical resources, will be reduced by mitigation measures identified in the approved General Plans. However, impacts related to development under the approved General Plans, such as land use changes to urban uses in unincorporated Marin County, displacement of wetlands in Novato, increased traffic volumes in the City of Sonoma, and alteration of the Sonoma Valley's visual character, may not be reduced to a less than significant level. Such impacts will remain significant and unavoidable, and as described in the No Project and No Action Alternatives (Section III, *supra*), would occur irrespective of whether the Program/Preferred Alternative is implemented.

VI. Comments on Final Environmental Impact Report/Final Environmental Impact Statement

On June 3, 2010, SCWA, on behalf of the NBWRA, transmitted the FEIS to Reclamation. On June 7, 2010, Reclamation published a Notice of Availability for the FEIS in the Federal Register, Volume 75, No. 108. Reclamation filed the FEIS with EPA on June 8, 2010, provided the FEIS to the Department of Interior's library, and published a press release for the FEIS on June 11, 2010. Reclamation distributed copies of the FEIS to the Member Agencies, the regional EPA and DOI offices, libraries, and members of the public requesting a copy. In total, 56 hard copies were distributed.

No comments were received on the FEIS.

VII. Implementing the Decision and Environmental Commitments

The Member Agencies have adopted all practicable means to avoid or minimize environmental harm for Phase 1 of the Preferred Alternative and are committed to ensuring that measures identified in the EIR/EIS are implemented.

The MMRP summarizes all the environmental commitments and mitigation for Phase 1 of the Preferred Alternative, specifies the party(ies) responsible for implementation, and provides a schedule for completion of all activities; Reclamation has no responsibilities outlined within the MMRP. Separately, through the cooperative agreements, Reclamation will require the Member Agencies to implement the Reasonable and Prudent Measure (RPM) set forth in the Incidental Take Permit in the BO for Phase 1 of the Preferred Alternative. The BO has one term and condition which implements the RPM. That term and condition is to adhere to the project description which includes the measures listed in Section V, *supra*. Furthermore, as mentioned above, the Member Agencies will also write the post-construction compliance report listed above.

Implementation of the MMRP and RPM is the responsibility of the Member Agencies listed below. On the following dates, these agencies adopted the attached MMRP as conditions of Project approval as required under CEQA:

Sonoma County Water Agency - December 8, 2009
Las Gallinas Valley Sanitary District - December 10, 2009
Novato Sanitary District - December 14, 2009
Napa County- December 15, 2009
North Marin Water District - December 15, 2009
Napa Sanitation District - December 16, 2009