

Program Preferences

There is a high degree of certainty these program preferences will be achieved by the projects in this proposal. The technical merit of each project is described in Attachment 7 and directly correlates to meeting the program preferences. The ability to proceed and achieve these program preferences is described in Attachment 3 of this proposal.

Statewide Priorities: Drought Preparedness

The following projects in this proposal address this Program Preference:

2. Davis-Woodland Water Supply Project Intake, and 6. Regional Collaborative Water Use Efficiency Program.

Davis-Woodland Water Supply Project Intake-this project will improve water use efficiency by combining facilities into a joint conjunctive use program. The Sacramento River Joint Intake Project will replace the largest unscreened surface water diversion facility on the Sacramento River. The joint use reduces the impacts associated with separate facilities. The WDCWA Surface Water Project (the Intake Project is a component of this larger project) which will provide a new water supply to meet existing needs in a conjunctive use program. The new water supply will improve drinking water quality, improve the quality of treated wastewater, diversify the water supply and improve overall supply reliability. The project will provide surface water to the Cities of Davis and Woodland. Both Cities are currently 100% dependent on groundwater. The proposed project will diversify the water sources for both cities. Additionally, the cities will be capable of storing surplus surface water during wet years through the use of aquifer storage and recovery (ASR) wells.

Regional Collaborative Water Use Efficiency Program- The Regional Collaborative Water Conservation Program will increase water education and water use efficiency in the Westside region. The improved use of water in the region addresses many of the Westside IRWM Plan goals spanning management of supplies to environmental benefits. The proposed Program will leverage and expand the implementation of water conservation education and consumer incentive programs and build on regional multi-county water conservation initiatives. This effort will include collaboration between participating agencies to increase and leverage water conservation education and outreach across Napa, Solano and Lake Counties. Aspects of the Program will include residential, CII (Commercial, Industrial, and Institutional) and agricultural water conservation incentives. The Napa County Westside region includes small communities near Lake Berryessa and one Disadvantaged Community (DAC). The Program consists of four

separate water conservation activities: Regional Water Conservation Education, Residential Rebates, CII Water Use Efficiency, and Agricultural Water Conservation Incentives.

This project will address long-term drought preparedness by contributing to sustainable water supply and reliability during water shortages. The project will reduce water consumption by upgrading fixtures with water efficient fixture and will reduce outdoor water use. The project promotes water conservation in a passive manner (by replacement of fixtures) and the agricultural and outdoor rebates will improve landscape and agricultural irrigation efficiencies thereby achieving a long-term reduction in water use.

Statewide Priority: Use and Reuse Water More Efficiently

The following projects in this proposal address this Program Preference:

2. Davis-Woodland Water Supply Project Intake, and 6. Regional Collaborative Water Use Efficiency Program.

Davis-Woodland Water Supply Project Intake Project will reduce energy use by reducing the amount of groundwater pumping.

Regional Collaborative Water Use Efficiency Program Project will reduce energy use by reducing the amount of groundwater. Also, in areas served by a municipal supply, this project will reduce the amount of indoor water use and therefore reduce wastewater loads.

Statewide Priority: Climate Change Response Actions

The following projects in this proposal address this Program Preference:

5. Middle Creek Flood Damage and Ecosystem Restoration Project, 7. Wastewater Storage Ponds & Disposal Improvements, and 8. Water Tank Replacement Project.

Middle Creek Flood Damage and Ecosystem Restoration Project-Reduce GHG Emissions: The Project will eliminate the need for two flood water pumping stations which consume approximately 200,000 KWh of electricity annually. The Project will eliminate GHG emissions generated from the operation and maintenance of the 3.5 miles of levees and from the agricultural operations in the Project area.

Wastewater Storage Ponds & Disposal Improvements-The proposed project will eliminate all

diesel powered motors and employ more efficient electric pumps. This switch from diesel to electrical pumps will reduce Greenhouse Gas Emissions.

Water Tank Replacement Project-Completion of the proposed improvements to the water system will:

- Provide reliable water supply of suitable quality for a DAC.
- Reduce public health risks by reducing contaminants in drinking water sources.
- Meet all drinking water standards for a DAC.
- Replace existing aging pumps, motors, and electrical equipment which will improve overall system efficiency.
- The Operations and Maintenance of the water system will see a reduction in Greenhouse Gas Emissions due to the installation of a SCADA system for remote process control of the pump stations.

Statewide Priority: Expand Environmental Stewardship

The following projects in this proposal address this Program Preference:

2. Davis-Woodland Water Supply Project Intake, 3. Dixon Main Drain/V-Drain Enlargement Project, 4. Lower Putah Creek Restoration: Monticello Dam to Dry Creek Project, 6. Regional Collaborative Water Use Efficiency Program, and 7. Wastewater Storage Ponds & Disposal Improvements.

Davis-Woodland Water Supply Project Intake, the intake is specifically designed to limit impacts to listed fish species in the Sacramento River.

The Dixon Main Drain/V-Drain Enlargement Project-The completed project will have approximately 18-19 acres of US Army Corps of Engineers regulated wetlands where there is approximate 13 acres of wetland now. The project includes five years of monitoring the created wetlands in order to ensure the establishment of a self-sustaining hydrophytic plant community that includes representative wetland taxa (i.e., wetland plant genera and species). The enlarged channels are designed to provide improved or superior habitat functions and values over the existing channels. Low flow channels will support perennially flowing water and floodplain benches and channel side slopes will remain saturated long enough during each wet season to promote sustainable growth of hydrophytic vegetation. Wetland areas will be monitored for five years after the completion of construction to verify their establishment.

In addition to the wetland area approximately 50 acres of uplands will be seeded with a variety of native perennial grasses. The upland area includes a portion of the channel slope above the

floodplain bench, the upland edge and the piled spoils area. In areas adjacent to pasture, a cattle exclusion fence will be installed to protect the plantings.

The Lower Putah Creek Restoration: Monticello Dam to Dry Creek Project- The project implements the science-based, community supported Lower Putah Creek Watershed Management Action Plan, priority locations in the upper watershed and priority objectives: restoring natural form and function, enhancing fish and wildlife habitat, controlling invasive vegetation and establishing weed resistant native vegetation.

The project improves public access to five fishing accesses, restores over 600 acres of riparian forest along nine river miles (30% of the length and 33% of the area of the entire 27 mile, 1,800 acre main channel riparian corridor) from Monticello Dam to Dry Creek by replacing 223 occurrences of invasive weeds (20 net acres) with weed resistant native vegetation, grading 13 acres to functional floodplain elevation, restoring 11,000 linear feet of channel, creating two thousand feet of new side channel salmonid rearing habitat, lowering water temperature by isolating a gravel pit from the flow channel, creating 12 new salmon spawning riffles, and adding two acres of shaded riverine habitat.

The project is designed to protect and improve fish and wildlife habitat, lower water temperatures, extend native fish dominated reaches, improve recreational access to public areas and restore natural channel form and function. Results will be measured by perpetual fish and wildlife monitoring studies compared with over ten years of baseline studies, observations of recreational use of previously inaccessible areas and water temperature data from several monitoring locations within and downstream of the project area.

The Lower Putah Creek Main Channel Restoration Project promotes ecosystem restoration by restoring natural channel form and function, controlling invasive species, enhancing wildlife diversity, sustaining and enhancing salmonid habitat and establishing native vegetation. The project addresses community priorities by controlling upstream populations of invasive weeds, improving public access to public lands and improving fish and wildlife habitat. The project implements the Lower Putah Creek Watershed Management Action Plan, a science-based, community-supported set of prioritized actions in prioritized locations.

Ecosystem restoration on Putah Creek is founded on restoring natural channel form, and reconciling channel dimensions with current flows. The greater incised channel of Putah Creek was formed by regular peak flows of 53,000 cfs on an average five year recurrence interval with fifty year peak flows spilling out of the channel at 107,000 cfs. Prior to the completion of Monticello Dam in 1957, the creek channel was managed primarily for flood conveyance and

gravel mining. The channel was realigned at the City of Davis to a constructed South Fork to reduce risk of flooding the city, and channelized along most of its length to speed the flow of water out of the system. These changes to natural alignment shortened the length of the channel and steepened the gradient causing head cutting to propagate upstream. Natural vegetation was also routinely removed mechanically or by burning and the flow channel was further manipulated to facilitate gravel extraction. Invasive weeds colonized the highly disturbed landscape and the combination of these effects resulted in a channel far outside of natural form, lacking accessible floodplains, lacking natural meander form, lacking natural pool, riffle, run sequence, impacted by invasive vegetation, especially Himalayan blackberry and arundo; and overly wide and deep for post-dam flows. This project addresses these issues by excavating the edge of the flow channel to functional floodplain elevation, reconnecting the flow channel to its floodplains and creating natural conditions for native riparian vegetation to flourish.

Cool water favors the unique assemblage of ten species of native fish on Putah Creek. A calibrated temperature model and subsequent field studies confirmed that the location of greatest warming of water on Putah Creek occurs at the Giovannoni pool, a captured gravel pit 2.5 miles below Putah Diversion Dam. This project addresses priority ecological objective of maintaining cool water temperature by filling the edge of the gravel pit to isolate it from the flow channel. The project also affords the opportunity to temporarily re-route the flow of the creek through the former gravel pit to dewater and narrow the flow channel and reintroduce natural meander form by filling point bars on opposite banks. The resulting narrower, meandering flow channel will allow planting of edge vegetation to provide shade over the water further reducing warming. The combined effects of these actions and prior similar restoration projects at the Dry Creek Confluence and at Winters Putah Creek Park are expected to double the length of year-around salmonid habitat from the current limit at the Dry Creek Confluence to the eastern boundary of Winters at Highway 505.

Regional Collaborative Water Use Efficiency Program may improve instream functions by reducing the amount of groundwater pumping and possibly improving instream functions.

Wastewater Storage Ponds & Disposal Improvements Project will impact approximately 210 blue oaks. In order to mitigate for this impact, the project will restore oak woodland habitat at a ratio of 2:1 or approximately 420 trees. The restoration plan and implementation will be completed by a qualified professional to ensure long-term success.

Statewide Priority: Practice Integrated Flood Management

The following projects in this proposal address this Program Preference:

3. Dixon Main Drain/V-Drain Enlargement Project and 5. Middle Creek Flood Damage and Ecosystem Restoration Project.

Dixon Main Drain/V-Drain Enlargement Project-The Dixon Main Drain intersects the Eastside Drain at Swan Road near the abandoned railroad tracks. Dixon Main Drain / V-drain Project will enlarge the Main Drain channel to provide an increase of capacity from here to the V-Drain. The V-Drain will also be enlarged from this point to the RD 2068 Intake Canal near Haas Slough to provide additional capacity. This project enlarges the Dixon Main Drain/V-drain by an initial additional capacity of 375 cubic feet per second over its existing average capacity.

The Dixon Main Drain / V-drain enlargement project provides capacity now, to reduce the frequency depth and duration of flooding for local events caused by decades of urbanization and changes in agricultural practices. Furthermore, it completes the most environmentally complicated and costly component of the Eastside Drainage Project.

The Eastside Drainage Project will provide improved flood protection to 600 acres of existing and future urban development and reduced flooding for 11,600 acres of agricultural lands. The JPA continues to investigate future projects that will incorporate the benefits of the Eastside Drain Project to an additional 500 acres of existing and future urban development in the Solano County Northeast Dixon Agricultural Supporting Limited Industrial land uses and 4,800 acres of agricultural lands.

The combined benefits of the Dixon Watershed Management Plan projects when completed, will achieve improvements to 68% of the planning area. These improvements are:

- Stormwater flow reduction, stormwater flow management, and improved water quality for 3,136 acres of existing and future urban development;
- Reductions in the depth, frequency, and duration of flooding on 18,640 acres of agricultural lands;
- Manage storm inflows from 4,800 acres of agricultural lands.

There is a high degree of certainty that the program preferences of resolving water related conflict and practicing integrated flood management will be achieved. The agricultural agencies and the City of Dixon have come together to study flooding problems and construct improvements (Pond A and Lateral 1 and Pond C) in the watershed. There is a medium degree of certainty flood control can be provided in the entire Eastside Drainage Project since improvements in the upper watershed are dependent on future development; however, only the construction of the Main Drain/V-Drain

Project will allow the possibility of reducing flooding in the upper watershed. There is a high degree of certainty that localized flooding in the Dixon Main Drain/V-Drain project area will be reduced by the project as shown in modeling results presented in Attachment 7. There is a high degree of certainty that the Project will be constructed given the progress made in permitting and design as presented in Attachment 3.

Middle Creek Flood Damage and Ecosystem Restoration Project provides multiple benefits by design. The Project need was driven by reducing flood risk behind the substandard levee and improving water quality in Clear Lake. Improving local water supplies and habitat restoration for both aquatic and terrestrial species are additional benefits that will also serve the ecosystem and community well.

Statewide Priority: Protect Surface Water and Groundwater Quality

The following projects in this proposal address this Program Preference:

1. Abandoned Well Incentive Program, 2. Davis-Woodland Water Supply Project Intake, 3. Dixon Main Drain/V-Drain Enlargement Project, 5. Middle Creek Flood Damage and Ecosystem Restoration Project, 6. Regional Collaborative Water Use Efficiency Program, 7. Wastewater Storage Ponds & Disposal Improvements, and 8. Water Tank Replacement Project.

Abandoned Well Incentive Program—Current County ordinances and State water well construction standards mandate that unused wells be destroyed to protect groundwater quality. However, properly destroying a well can be expensive and in practice, many wells are not destroyed. Many wells were abandoned decades ago with the responsible party long gone. Additionally, the local agencies in the Sacramento Westside region have no staff or programs in-place to address abandoned wells. Although the importance of properly destroying abandoned wells is very well known and codified in the California Water Code, many abandoned wells remain in existence. These wells contribute to degradation of groundwater quality from numerous current, and future unknown, contaminants.

Davis-Woodland Water Supply Project Intake Project will protect groundwater quality by reducing pumping which accelerates the downward movement of contaminants into the groundwater. The use of surface water in place of groundwater will decrease the levels of Selenium, Manganese, Salinity and Boron in the wastewater discharges from the two cities.

Dixon Main Drain/V-Drain Enlargement Project is designed specifically to provide water quality benefits by reducing herbicide use, reducing instream erosion and eliminating livestock access

to the channel. The project will construct 8,600 feet of permanent fence along the western project boundary that will prevent livestock (cattle) from accessing the channel as is the case currently. Eliminating livestock's access to the water course will eliminate erosion and sedimentation caused by the livestock trampling and consuming vegetation. Furthermore, livestock will no longer be defecating in the waterway. The project will protect 24 acres of channel that is currently accessed by livestock. There is a high degree of certainty these program preferences will be achieved. Channel construction, planting and fencing are all included in the proposed project. The project has received the majority of required permits and has an approved EIR and 95% complete design documents as discussed in Attachment 3.

Middle Creek Flood Damage and Ecosystem Restoration Project-One of the driving needs of the project is to improve water quality in Clear Lake. The water quality benefits of the project were identified in the Clean Lakes Report and the USACE Reconnaissance Study. The Project water quality benefits are recognized and recommended for implementation in the Mercury TMDL for Clear Lake and the Nutrient TMDL for Clear Lake.

Wastewater Storage Ponds & Disposal Improvements-Insufficient storage capacity of the District's on-site wastewater treatment and disposal systems has resulted in the discharge of approximately 3.5 MG of treated wastewater annually to Lake Berryessa. These discharges may result in surface water degradation and is a potential public health hazards. The completion of the project will create adequate storage and disposal capacity in the system to eliminate these discharges of wastewater to the Lake.

Water Tank Replacement Project- The proposed project will protect surface water quality through the elimination of wastewater discharges caused by the lack of storage capacity of the District's existing wastewater facilities. Insufficient storage capacity of the District's on-site wastewater treatment and disposal systems can result in ground and surface water degradation and public health hazards. The completion of the project will minimize these impacts to ground and surface water sources.

Statewide Priority: Ensure Equitable Distribution of Benefits

The following projects in this proposal address this Program Preference:

1. Abandoned Well Incentive Program, 5. Middle Creek Flood Damage and Ecosystem Restoration Project, 6. Regional Collaborative Water Use Efficiency Program, 7. Wastewater Storage Ponds & Disposal Improvements, and 8. Water Tank Replacement.

Abandoned Well Incentive Program-Large areas of Lake, Solano, Yolo, and Napa Counties are currently within DACs. Wells destroyed in these areas will benefit groundwater quality. If there is oversubscription of the program, priority will be given to DACs.

Middle Creek Flood Damage and Ecosystem Restoration Project directly benefits disadvantaged communities and has been developed with the input of the community. By improving the water quality in Clear Lake, it will improve the source drinking water for public water supplies that serve a year round population of 33,252 and a transient population that exceeds 100,000. Restoration of the shallow water habitats will benefit many native fish and wildlife species, many of which are considered culturally significant by the Pomo Indians in Lake County.

Regional Collaborative Water Use Efficiency Program-The project will offer rebates to the DACs in Napa County.

Wastewater Storage Ponds & Disposal Improvements Project address wastewater treatment and disposal needs of a Disadvantaged Community. Current water and sewer rates do not support year-to-year operations of the facilities, including the costs associated with capital improvements. Without outside funding to update the District's facilities, service rates would need to be increased to cover operational and capital improvement expenses to levels that would be unaffordable for those living in the DAC. This would result in displacement and foreclosure for many of the residents.

Water Tank Replacement Project addresses wastewater treatment and disposal needs of a Disadvantaged Community. Income surveys conducted in 2012 documented that the District serves a DAC. Current water and sewer rates do not support year-to-year operations of the facilities, including the costs associated with capital improvements. Without outside funding to update the District's facilities, service rates would need to be increased to cover operational and capital improvement expenses to levels that would be unaffordable for those living in the DAC. This would result in displacement and foreclosure for many of the residents.