

## WESTSIDE IRWMP WORK PLAN

### INTRODUCTION

The Westside Subregion (Exhibit A) of the Sacramento River Region Funding Area (Westside) Integrated Regional Water Management Plan (IRWMP or Plan) defines a clear vision for the management of water resources in the Westside Sacramento Region (Region) and highlights important actions needed to accomplish that vision through the year 2035. The IRWMP is intended to be a useful planning tool, and simply that. It does not provide discretionary approval for any given project. Rather, it provides a framework for improved understanding and actions to address the major water-related challenges and opportunities facing the Region through the planning horizon.

The focus and direction described within the Plan provides an opportunity for the more than 70 water supply, land use management, flood management, and ecosystem-focused organizations operating within the Region to accomplish more than they could accomplish individually. The integrated array of goals and objectives, selected resource management strategies, and priority projects demonstrate the successful collaborative working relationships fostered through the Plan development process (draft sections of the Westside IRWMP are available at: [westsideirwm.com](http://westsideirwm.com)).

The formation of the Westside Regional Water Management Group (RWMG) in September 2010 highlights the proactive approach being taken by numerous water managers and stakeholders in the Region. Before this IRWM planning effort, four of the five counties represented in the RWMG had already developed or begun development of county-based plans. The recent requirement to prepare a more watershed-focused plan in order to be eligible for financial assistance from the State's Proposition 84 funds presented unique opportunity to build upon these previous efforts and existing relationships. Now, this Plan represents the synthesis of years of water planning efforts, and establishes a clear path forward for agencies to improve the collective understanding related to Integrated Water Management within the Region and respond collaboratively to meet the challenges of managing the Region's water and associated natural resources.

### Regional Features

The Westside encompasses approximately 3,000 square miles, spanning from the Coastal mountain range in the west to the Sacramento River and Sacramento-San Joaquin River Delta on the south and east. The Region includes all of Yolo County and the portions of Lake, Napa, Solano, and Colusa counties that are within the Cache Creek and Putah Creek watersheds. Major communities within the Region include the cities of Clearlake, Davis, Dixon, Lakeport, Rio Vista, Vacaville, West Sacramento, and Woodland.

Refer to Exhibit A for a map of the Region.

#### Primary Focal Points for the IRWM Plan

The collective vision presented in this Plan is designed to address the major challenges and opportunities related to managing water and the associated natural resources within the Westside Region. Collectively, the numerous and complex challenges and opportunities addressed in this Plan are captured in the following primary focal points:

- Address many significant and long-standing water quality concerns
- Continue to provide reliable water supplies for a variety of uses
- Foster the reasonable use of water and associated natural resources within the Region through the adoption of evolving technologies and best management practices
- Further the collective understanding of watershed functions and groundwater basins
- Improve education and awareness among citizens about the importance of sustainable water and natural resources management and the crucial roles citizens play
- Improve habitat and ecosystem health (including the monumental challenge of addressing effects caused by numerous invasive species)
- Improve opportunities for water-based recreation
- Manage a wide array of risks including public health, fire, flood, and potential disruptions to institutional services
- Sustain and modernize water supply, water quality, and flood management infrastructure

The protection and improvement of water quality is essential to both aquatic ecosystem function and human health. Surface water quality within the Region has been identified as a key factor affecting drinking water and ecosystem function. Issues such as mercury contamination, cyanobacteria management, long-term groundwater quality degradation as well as meeting of water quality objectives are key Regional water quality concerns addressed within this IRWM Plan. Likewise, groundwater quality throughout the Region is somewhat variable, depending on the aquifer layer that it is pumped from. Groundwater quality has implications for wastewater and wastewater discharge requirements in the future; agencies that currently rely on groundwater are considering a shift to surface water to address these concerns. High levels of boron, nitrates, iron, and manganese, and emerging contaminants such as hexavalent chromium, some of which are naturally occurring in groundwater, are also of concern in some areas. Water use within the Region is predominantly for agricultural irrigation. Municipal and industrial (M&I) use is small relative to the agricultural use, but vital, because it supports a number of local communities. Although some population growth is expected throughout the Region between now and 2035, agriculture is expected to remain the

dominant water use into the foreseeable future.

#### Formation of the IRWM Region

The Westside Region was founded by several agencies that had completed or were in the process of developing IRWM plans. Before the formation of the Region, Yolo and Solano Counties each adopted IRWM Plans, Napa County had developed an Integrated Water Resource Management Planning Framework (IWRMPF), and Lake County had developed an Integrated Watershed Management Plan and initiated IRWM planning efforts. County lines served as the Region boundaries for each of these efforts. The state Department of Water Resources (DWR) later clarified its preference for Regions to be based on watersheds as well as to span larger areas than the county-based Region boundaries. Proposition 84 identified watershed-based funding areas throughout the state with the Region being a part of the Sacramento River Funding Area.

Each Funding Area is allocated, based on population, a portion of the \$1 billion approved by the voters under Proposition 84 in 2006. Predecessor bonds, Proposition 13 and Proposition 50, provided incentives for development of IRWM Plans. The IRWM Plan process is consistent with the California Water Plan, a statewide water resources planning document updated periodically, and DWR intends that IRWM Plans and future updates of the California Water Plan will be integrated further in the future.

The Westside Region was created to include the two principal watersheds of Putah and Cache Creeks, and the commonly managed land in the northern portion of Yolo and Solano Counties. Some portions of the Region included areas that were not likely to be included in neighboring IRWM regions, and which share many common water supply sources and groundwater basin interconnections.

Although the Putah and Cache Creek watersheds were the basis for the Region boundaries, the Region also accounts for the following boundaries and includes the following features:

- Political/jurisdictional boundaries: the entirety of Yolo County and portions of Colusa, Lake, Napa, and Solano Counties;
- Surface water bodies: Clear Lake, Lake Berryessa, and Indian Valley Reservoir; and
- Major water related infrastructure: Monticello Dam, Indian Valley Dam, Cache Creek Dam, and Capay Diversion Dam.

#### Regional Water Management Group (RWMG)

As noted above, the agencies in the Region recognized the need for, and benefits of, regional cooperation and planning. To represent the Region, the RWMG was formed through a Memorandum of Understanding (MOU) between the Lake County Watershed

Protection District, Napa County Flood Control and Water Conservation District, Colusa County Resource Conservation District, Solano County Water Agency, and Water Resource Association of Yolo County. The RWMG includes three or more lead agencies with statutory authority over water and meets the definition of a RWMG as defined by CWC Section 10539.

As stated in the MOU, these agencies and associations joined together to develop an IRWM Plan that will:

- Foster coordination, collaboration, and communication among entities responsible for water-related issues and interested stakeholders to achieve greater efficiencies, provide for integration of projects, enhance public services, and build public support for vital projects.
- Assist in the development of a comprehensive Plan to facilitate regional cooperation in providing but not limited to water supply reliability, water recycling, water conservation, water quality improvement, storm water capture and management, flood management, wetlands enhancement and creation, and environmental and habitat protection and improvements and obtain funding for plan development.

#### Overview of Stakeholder Involvement Process

The RWMG acknowledged that agencies and planning jurisdictions must work closely together to foster the delivery of clean reliable water, improve protection of people and structures from flood damage, and protect aquatic species and riparian habitats throughout the Region. The process for this Plan included extensive stakeholder outreach to help ensure that the Plan reflects the water-related needs of the entire Region, promotes the formation of regional partnerships, and encourages increased coordination with state and federal agencies. The term stakeholder is used to refer to representatives of agencies, nonprofit groups, nongovernmental organizations, government organizations, and the public who were interested and participated in the development of the IRWMP.

One of the benefits of this planning process is that it succeeded in bringing together a broad array of groups into a forum to discuss and better understand shared needs and opportunities. Members of the RWMG and other stakeholders participated in stakeholder meetings, reviewed meeting materials that included draft Plan sections, and provided extensive collaborative input to shape this IRWMP. In addition, through participation in meetings, stakeholders have been exposed to a variety of opportunities for discovering and establishing mutually beneficial partnerships.

The Coordinating Committee (RWMG delegated staff) convened via conference call at least once before each stakeholder meeting to review and discuss the meeting agenda and materials before posting them on the web. Stakeholder meetings were held every

one to four months, with a total of 12 meetings. Some meetings were repeated at multiple locations and/or webcast, during the planning process. The stakeholder meetings were open to the public and all other interested parties. Copies of the meeting agendas, minutes, presentations, and attendees are available on the project website ([www.westsideirwm.com](http://www.westsideirwm.com)).

## **Goals and Objectives**

The goals and objectives presented in the IRWMP represent the foundational intent of the Plan. Formulating meaningful and relevant goals and objectives for the Westside Region required more collaboration and collective interaction than any other section of the Plan. Developing the goals and objectives took place over an 11-month period with about 15 conversations among various combinations of the Coordinating Committee, Stakeholder Group, and the Consultant Team. The draft Goals and Objectives were circulated for review and comment to the stakeholders five (5) times to allow for thorough consideration and refining of what ultimately sets the direction of the Plan.

For the Westside IRWMP, the term goal is used to mean a desired outcome or result for which effort will be made to accomplish. The Plan Goals describe a high-level perspective of what the Plan is intended to address (and by inference what it is not intended to address). The Plan Goals are written to be relevant over the entire planning horizon and beyond, and may never be fully realized. In other words, effort towards achieving the Plan Goals is expected to continue indefinitely. For example, the first listed goal “Acknowledge and respect the cultural values and resources of the Region” is something that the stakeholders will always strive to achieve and improve.

In contrast, the term objective is used to mean a specific and tangible outcome that is intended to be achieved by or during a designated time. The Plan Objectives were developed using the “SMART” criteria, meaning that each objective should be Specific, Measurable, Attainable, Relevant, and Time-based. When crafted properly, SMART objectives help to promote actions that lead to measurable results consistent with Plan Goals. Objectives written using the SMART format are designed to allow people to measure and track progress toward improving integrated water management within the Region over time. In some cases, the Plan Objectives include specific dates for completion (for example see Objective 4) and in other cases they are to be done throughout the planning period (for example see Objective 1). In a few cases, the intended completion date of an objective may depend on the result of completing another objective (for example see Objective 6).

The Plan Goals and Plan Objectives were developed between January and December 2012 using an iterative and collaborative approach that included three phases:

- Identify challenges and opportunities within the Region

- Propose draft Plan Goals, discuss, review and refine
- Propose draft Plan Objectives, discuss, review and refine

The first step in developing Plan Goals and Objectives was to identify the water related challenges and opportunities that people believed to be important in the Region now. Once the Stakeholder Group had identified a representative list of challenges and opportunities, Plan Goals were proposed by individual Stakeholders, the Consultant Team and members of the Coordinating Committee. The draft Plan Goals were discussed, reviewed and refined over several months until broad agreement was reached on the Plan Goals and Objectives listed below.

The Westside IRWMP Goals are described below. The Goals addressed in this proposal are bolded and include 10 of the 13 Westside Goals from the 8 projects included in this application.

1. Acknowledge and respect the cultural values and resources of the Region.

The Westside Region includes nearly 3,000 square miles, includes a diverse population of almost 400,000 people, and almost 530,000 acres of farmland in 2010. The Region is home to a number of Native American tribes and has a long history of changing culture and landscapes. This goal is intended to highlight the diverse cultural values and resources in the Region and to promote collaboration to preserve that diversity.

2. **Improve education and awareness throughout the Region about water, watershed functions, and ecosystems and the need for sustainable resource management to protect community health and well-being.**

Natural scientists and resource management professionals recognize the complex interdependencies that exist between people, their use of water, the watersheds, and the associated ecosystems. Unfortunately, many people who are not natural scientists or resource management professionals do not recognize or appreciate this interdependence. This goal underscores the importance of educating the citizens of the Region about the roles they play in this complex and dynamic water system and what they can do to help the communities and ecosystems to be healthy and thrive over the long-term.

3. Improve the collective understanding of watershed characteristics and functions (natural and human induced) within the Region as needed to respond effectively to evolving water resources management challenges and opportunities (e.g., climate change).

The watersheds within the Region are complex and dynamic. As human activities and water uses have changed and continue to change, the watersheds and other resources

have also changed. This goal highlights the importance of continuing to learn more about the characteristics and functions of the watersheds in order to respond strategically and skillfully to changes that occur in the future.

**4. Improve water-related public health across the Region and emphasize improvements for populations most in need.**

Water serves a critical role in the public health of citizens within the Region. Everyone relies on water supplies for household use, sanitation, and food production. The quality of the water for drinking and recreation can also affect the health of people suddenly and over time. Several of the areas within the Region include citizens whom are considered economically disadvantaged. This segment of the population can be disproportionately challenged with public health. This goal emphasizes the need to continue to focus on improving public health, especially for those citizens who need support the most.

**5. Preserve and enhance water-related recreational opportunities.**

People enjoy a wide variety of recreational opportunities related to the water features of the Region. This goal acknowledges that efforts to sustain and enhance recreational opportunities into the future are an important component of integrated water management.

**6. Preserve, improve, and manage water quality to meet designated beneficial uses for all water bodies within the Region.**

There exist a number of water quality concerns and challenges for surface water and groundwater throughout the Region. The level of concern or challenge about the water quality depends upon how the water is being used and the specific water body or aquifer being considered. This goal highlights the importance of improving the water quality within some water bodies as appropriate for how the water is being used and for preserving the water quality levels where they are within desirable ranges now.

**7. Promote reasonable use of water and watershed resources.**

Water and natural resources within the Region play a central role in the health and well-being of the citizens within the Region. As populations grow, it becomes increasingly important to use the water and natural resources in ways that are sustainable. One way to support sustainability is to avoid wasting water and other natural resources and to continue to implement cost effective conservation and efficiency improvements.

**8. Protect and enhance habitat and biological diversity of native and migratory species.**

Much of the riparian habitat within the Region have been affected negatively with changes in land use, water management, and flood protection practices over the past 100 years. This goal underscores the importance of protecting and improving the remaining habitats in ways that benefit native and migratory species.

**9. Provide reliable water supplies of suitable quality for multiple beneficial uses (e.g., urban, agriculture, environmental, and recreation) within the Region.**

People within the Region apply water for many different uses to produce a variety of benefits. Providing these water supplies at the desired time, place, quantity, and quality requires (and will continue to require) significant effort and investments in maintaining and improving infrastructure and other management systems.

**10. Reduce the risk of disruptive natural and human-caused disturbances affecting the Region's water resources including flooding, fire and significant institutional interruptions that reduce resources management services.**

People face numerous hazards within the region that could cause harm to their health and well-being. This goal highlights the importance of continuing to monitor, understand, and mitigate the range of hazards related to water and watershed management (such as floods, wildfires, budgetary crises, etc.) that could negatively impact the citizens of the Region.

**11. Support improved regional water management through governance throughout the Region that uses science and collaboration to make fair and equitable decisions and investments.**

This goal acknowledges the wide array of stakeholders and diverse interests within the Region and commits water managers within the Region to continue to use science and open, fair, and collaborative approaches to managing water resources and making decisions about investments that affect many people.

**12. Support sustainable economic activities consistent with local and state government planning efforts within the Region.**

This goal highlights the fact that all water management activities within the Region are done to support a stable and growing economy for citizens and communities over the long-term. While there are many factors that influence economic stability and growth, integrated water management is one of the crucial factors. Local and state government must continue to improve integrated water management in order to achieve the economic stability that is desired.

**13. Improve the form and function of degraded channels.**

Unfortunately, many of the natural channels in the Region have been altered significantly as land uses, water management, and flood protection practices have changed. In many cases these changes have degraded important habitats and water conveyance capacities of the channels. This goal emphasizes the need to improve the form and function of natural channels in ways that allow them to provide multiple benefits and require less human intervention and maintenance over time.

Once a draft list of Plan Goals was formed, the RWMG began proposing potential Plan Objectives that met the SMART criteria. The first draft Plan Objectives were presented in April 2012 and discussed, reviewed, and refined over seven (7) months leading to the 24 broadly supported Plan Objectives listed below. The Plan Objectives are organized according to the ten (10) focus areas identified for the challenges and opportunities.

Given the number of objectives and range of activities needed to meet the objectives, the Project Team and stakeholders decided to prioritize the objectives to help focus efforts during implementation of the Plan. The Project Team set initial priorities for the objectives in terms of their importance and urgency. The importance assigned to each objective reflects the relative significance or consequence (for the Region as a whole) of satisfying that objective as compared to other objectives for the Region. The urgency assigned to each objective reflects the relative degree to which that objective warrants speedy attention or action as compared to other objectives.

The preliminary prioritization was then presented to the stakeholders during Stakeholder meetings and reviewed, discussed, and refined. The Westside Objectives, with qualitative and quantitative measurements, Plan goals they address, and priorities are attached in Exhibit B. The projects included in this proposal address 13 of the 24 objectives (bolded), they are summarized below.

- 1. Provide and promote use of educational curricula designed to increase awareness of watershed and resource stewardship and how individual stewardship relates to community health and well-being for K-12 students starting July 2013 through the planning period.**
- 2. Provide educational information designed to increase awareness of watershed and resource stewardship and how individual stewardship**

**relates to community health and well-being for the adult population within the Region starting July 2013 through the planning period.**

- 3. Restore native vegetation and form and function along riparian corridors, canals, and other aquatic sites throughout the Region to provide stream shading, habitat enhancement and increased biological diversity through 2035.**
4. Quantify the extent of suitable life-cycle habitat currently accessible to threatened, endangered, or imperiled native fish within the Region by December 31, 2015.
5. Prioritize, plan, and schedule improvements in suitable life-cycle habitat accessible for threatened, endangered, or imperiled native fish within the Region by December 31, 2015.
6. Increase availability of suitable life-cycle habitat for threatened, endangered, or imperiled native fish as designated in the result of Objective 5.
7. Prevent colonization of any regional water body by Quagga mussels or Zebra mussels and eliminate or prevent the spread of New Zealand mud snails from Putah Creek during the planning period.
8. Establish an invasive plant management plan (including specific and measurable targeted outcomes for species of concern and a schedule to accomplish target outcomes) for the entire Region by December 31, 2015.
- 9. Implement programs and projects to meet the designated outcomes defined in the invasive plant management plan developed in Objective 8 (according to the schedule provided in that plan).**
10. Create an asset management plan for key water management infrastructure within the Region consistent with the guidance provided in the International Infrastructure Management Manual by December 31, 2015.
- 11. Meet 20% by 2020 statewide water conservation targets by December 31, 2020.**
- 12. Increase adoption of locally cost effective agricultural best management practices (BMPs) throughout the planning period.**
- 13. Maintain and increase water-related recreational opportunities within the Region throughout the planning period.**
- 14. Provide adequate flood protection for all urban and rural areas within the Region by December 31, 2050.**
15. Manage watershed activities and conditions to reduce the risk of large erosion events that could increase undesirable sediment loading to water bodies throughout the planning period.
16. Monitor planning of state and federal water related projects and programs in the Delta and estimate potential local impacts throughout the planning period.
17. Monitor conditions and improve understanding to support sustainable use of groundwater basins within the Region as an important part of the Region's water supply throughout the planning period.

18. Maintain and enhance monitoring network and information sharing to support management of watersheds and natural resources within the Region throughout the planning period.
19. **Address pollutant sources in order to meet runoff standards and satisfy targets as described in specific TMDL's within the Region throughout the planning period.**
20. **Minimize accidental spillage/discharges of wastewater to receiving waters throughout the planning period.**
21. **Reduce public health risks by reducing contaminants of concern in drinking water sources throughout the planning period.**
22. **Meet all drinking water and wastewater discharge standards within the Region throughout the planning period.**
23. **Provide 100% reliability of municipal and industrial (M&I) water supplies of appropriate quality to meet forecasted demands within the Region throughout the planning period.**
24. Provide agricultural water supplies of appropriate quality to support a robust agricultural industry within the Region throughout the planning period.

### **Purpose and Need**

The purpose of this proposal is to address the water-related challenges and opportunities facing the Region. The challenges and opportunities are reflective of the priority considerations that were articulated by stakeholders early in the Plan development process. The need of this proposal is articulated below in how the proposed projects address the Focus Areas.

Ten challenge and opportunity Focus Areas were developed for inclusion in the Plan as follows:

- **Education and awareness**– fostering broader watershed stewardship in the community.
- **Habitat and invasives**– restoring and enhancing riparian habitat, protecting endangered and listed species, and reducing the spread/preventing invasive species.
- **Water supply**– providing reliable water supply at the time and location needed for beneficial uses in the region.
- **Infrastructure** – ensuring appropriate investments in water-related infrastructure are made to provide a reliable supply system over time.
- **Reasonable use**– promoting reasonable use of water supplies and watershed resources.
- **Water quality**– providing appropriate quality water compatible with its intended use(s).
- **Risk management**– addressing the risks associated with water and natural

resources management (e.g., flood, drought, fire, etc.).

- **Understand watershed function**– improving the information and knowledge base of watershed function and management.
- **Recreation**– maintaining and expanding water-based recreational opportunities

The Goals and Objectives of the Plan were developed with the intent of addressing the challenges and opportunities in the Region. The projects included in this proposal help address those goals and objectives, which in turn start to address the ten focus areas mentioned above.

The 8 projects address 9 of the 10 focus areas described above. Further description of how the projects address the Focus Areas is found below describing the need for these projects within the Region.

### **Education and Awareness Focus Area**

Historical and ongoing human activities have had profound detrimental effects on the watersheds of the Westside Region. Many people may not even realize that the actions they are taking are having a negative effect on the well-being of their community and the watershed. Some examples of harmful actions include: irresponsible application or discharge of stormwater that transports runoff pollutants (fertilizers, pesticides, oil and grease); illegal dumping of garbage and refuse near water bodies; and septic system overflows that can contaminate creeks, streams, and lakes affecting critical fisheries and aquatic species habitat. Boating- related challenges that can adversely impact watersheds include improper disposal of trash or sanitary waste and the spread of invasive species from one water body to another.

Community outreach should be focused on engaging the public in a practical and collaborative effort to help them understand the importance of the watersheds and natural resources of the Region, how these resources affect them individually, and what they can do to help sustain these vital resources. Increased awareness and understanding about sustainable management and the long-term impacts of unsustainable activities can foster better public involvement in and financial support of effective resource management and watershed protection.

### **Need: Regional Collaborative Water Use Efficiency Program to help address the Education and Awareness Focus Area**

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).

### **Habitat, Endangered and Invasive Species**

Maintaining the natural character of the Region is a value that has been clearly articulated by stakeholders, and with that comes the desire to maintain the health and biological diversity of native aquatic and riparian species. Multiple conservation areas, such as the Yolo Bypass Wildlife Area, Cache Creek Natural Area/Cache Creek Wilderness Area, Clear Lake Wildlife Area, Berryessa Snow Mountain (proposed) and Mendocino National Forest have been established or are proposed for establishment in the Region in order to protect important species. The Inner Dam Reach of Putah Creek is proposed by the CA Department of Fish and Game as a Designated Heritage Trout Waters. In addition, Cache Creek is designated as a California Wild and Scenic River. This Wild and Scenic River designation for over 31 miles of the creek is designed to maintain free flowing conditions and preserve its aquatic and riparian environment. However, these conservation areas and designations do not cover the entire Region, and additional work is necessary to improve special status and endangered species habitat including:

- Increase productive floodplain connectivity
- Improve overall fish passage
- Expand contiguous extent of riparian canopy
- Establishment and management of reserves and preserves, and
- Protection of vernal pools and migratory bird wintering areas.

The lakes, creeks, wetlands, sloughs, Delta, and other water features that exist throughout the Region provide key habitat for many of California's most important fish and wildlife species. Anadromous fish migrate into the Region and use its waterways for spawning. Resident and migratory waterfowl rely on the lakes and wetlands for food and nesting habitat. Over 50 federally and state listed wildlife and plant species are found in the Region, and hundreds of other species with special-status designations are supported by the habitats of the Region. Populations of fish that are declining throughout the state can still be found in the Region. Of particular note is the Clear Lake hitch; while not federally or state listed, the Clear Lake hitch has been identified by the California Department of Fish and Game as a species of special concern.

Invasive plants present a significant challenge to the management of the Region's water resources. Beginning in the late 19<sup>th</sup> Century through today, development of urban communities, large areas of agriculture, and disturbance of the stream channels through

mining and construction of infrastructure has altered riparian habitat throughout the Region. This disturbance has increased intrusion of invasive species in both terrestrial and aquatic areas that can have widespread impacts through the watershed. A number of invasive plants and animal species either already occur or pose a threat to the Region. Invasive plant species of concern include arundo donax (giant reed), tamarisk, french and scotch brooms, yellow star thistle, water hyacinth, Eurasian milfoil, and ravenna grass.

**Need: Lower Putah Creek Restoration: Monticello Dam to Dry Creek Project and the Dixon Main Drain/V-Drain Enlargement Project to address the Habitat and Invasives Focus Area**

The Lower Putah Creek Restoration: Monticello Dam to Dry Creek 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 Dixon Main Drain/V-Drain Enlargement Project is designed to protect and improve water quality, improve water reuse efficiency, improve storm water management, creates a multipurpose flood management (drainage) program, protect and improves wildlife habitat, and implement the DWM plan.

**Water Supply**

Groundwater is a key component of the Region's conjunctive water supply portfolio. The challenges associated with maintaining the capacity of the many groundwater aquifers vary throughout the Region. A primary challenge associated with groundwater supply is that very little data is available regarding the sustainable yield of groundwater aquifers in the Region. Although agencies have made efforts in improving understanding of the groundwater resource through preparation of groundwater management plans and monitoring programs, much work remains to truly understand the reliable, sustainable supply available from groundwater aquifers.

Historical overdraft conditions in the subbasins of the Sacramento Valley Groundwater Basin led to the development of supplemental surface water delivery projects to offset groundwater demand. The current conjunctive use measures reduced the concerns of subsidence and allows for increased reliance on groundwater supplies in the Valley Floor Planning Area during drought periods when surface water supplies are sometimes restricted.

Groundwater makes up approximately 33% of the water supply for users in the Valley

Floor Planning area in an average water year, and for many agricultural users and municipalities is the only source of supply. Some agricultural areas, such as the Yolo Zamora area are fully reliant on groundwater. Municipalities such as the Cities of Woodland, Davis, Dixon, and Rio Vista also currently obtain all of their drinking water supplies from wells. The Cities of Davis, Woodland, and Vacaville obtain some of their water from the deeper Tehama formation, which is of high quality but has an uncertain sustainable yield.

**Need: Davis-Woodland Water Supply Project-Intake Construction**

The Davis-Woodland Water Supply Project-Intake Construction Project is designed to increase habitat for threatened fish populations and is a key element of the WDCWA surface water 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. Decreased pumping of groundwater will improve groundwater levels and quality diminished by years of pumping. This Project also contributes to the Endangered Species Focus Area above.

**Reasonable Use**

The reasonable use of available water supplies is an important regional opportunity to ensure all water users are utilizing these limited resources in a reasonable way. Many recent regulatory requirements require additional steps towards reasonable water use such as the Water Conservation Act of 2009 (SBX7-7), which requires a 20 percent statewide reduction in per capita water use by 2020 for urban water suppliers. The urban water suppliers in the Region, including the Cities of Davis, Dixon, Vacaville, and West Sacramento are currently implementing plans to achieve their specific water use targets that are consistent with direction provided by the state Department of Water Resources. Some of the methods being used by urban water suppliers include water conservation Best Management Practices as defined by the California Urban Water Conservation Council. Similarly, agricultural water suppliers (suppliers with more than 10,000 irrigated acres) are required by December 31, 2012 to adopt and implement cost-effective Efficient Water Management Practices in an effort to practice reasonable use of agricultural irrigation water at the farm level.

**Need: Regional Collaborative Water Use Efficiency Program to help address the Reasonable Use Focus Area**

This project is described above, it addresses multiple Focus Areas.

**Risk Management**

The general challenge for the Westside Region related to flood is to provide an

appropriate level of flood protection, which will need to be specific to the portions of the Region for which flood risk exists. For example, the approaches to flood protection for the communities surrounding Clear Lake may be very different than the approach for reducing the flood risk for the Cities of Woodland and West Sacramento because the people/resources at risk and flooding mechanisms vary between these locations. In addition, providing an appropriate level of flood protection to areas within the Region requires close coordination and collaboration between a multitude of local, state, and federal agencies, similar to efforts underway for the Central Valley Flood Protection Program.

Furthermore, the impacts of climate change in the Region are expected to include more extreme weather events that could increase the frequency and duration of flooding. This will be exacerbated in the Valley Floor because of the subsidence that has occurred behind some of the levees that can reduce the effectiveness of the levees. In addition, increasing development pressures, especially along the lakeshore of Clear Lake continues to occur as tourism and second homes are promoted, could lead to increased flood risk for developing areas.

**Need: Dixon Main Drain/V-Drain Enlargement Project to address the Risk Management Focus Area**

The Dixon Main Drain/V-Drain Enlargement Project is described above, it addresses multiple focus areas.

**Water Quality**

Water Quality basin management objectives are prescribed by the Regional Water Quality Control Board in the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins (Basin Plan) to protect the many beneficial uses of the Region's waters including municipal and domestic supply, agricultural supply, industrial supply, recreation, fishing, freshwater and wildlife habitat, and migration and spawning corridors. The basin plan water quality objectives that apply to the Westside Region are mainly qualitative, but have widespread effects throughout the ecosystem. Non-point source pollution, such as urban stormwater runoff and sediments from roadways and parking lots are some of the water quality issues addressed in the plan. More quantitative objectives will likely be adopted as part of the development of Total Maximum Daily Loads (TMDLs) for the basin.

There is a unified regional desire to improve the quality of the lakes and waterways that are impaired by various water quality constituents. The Basin Plan identifies many of the Region's waterbodies as 303(d) listed water quality impaired under the Clean Water Act. Some of the 303(d) listed constituents of primary concern include mercury, boron, pesticides, nutrients, and fecal coliform.

Mercury is a significant source of water quality impairment and is a legacy of the Region's mining history. Erosion of naturally mercury-enriched soils, geothermal springs and atmospheric deposition contribute mercury to the watershed, but the major source of mercury is runoff from historic mines (Regional Water Quality Control Board 2011). The mercury TMDLs that have been developed for Clear Lake, Cache Creek, Bear Creek, Harley Gulch and Sulphur Creek prescribe cleanup of inactive mines and erosion control measures to decrease the transport of mercury. Mercury from the Upper Cache Creek flows through Cache Creek to the settling basin which drains into the Yolo Bypass. The Yolo Bypass eventually drains into the Bay Delta. The Cache Creek is a major contributor of mercury to the Bay Delta through this pathway.

A major surface water quality challenge specific to the Upper Cache Creek Planning Area is the algal blooms on Clear Lake. A high concentration of nutrients including phosphorus flowing naturally into Clear Lake have created eutrophic conditions. For much of the past century, Clear Lake has been subject to cyanobacteria, or blue-green algae, blooms that form mats on top of the lake surface.

Wastewater discharges are regulated by the Regional Water Quality Control Board through the issuance of waste discharge requirements (WDR) for land application or National Pollutant Discharge Elimination System (NPDES) permits for discharges to surface waters. Discharge requirements that are established in part to be consistent with the basin management objectives are posing difficulties for many agencies in the Region. Some of the challenging new requirements in some permits include selenium discharge limits and potential future limits for boron and salinity.

Meeting applicable drinking water standards is a challenge for the Region's surface water and groundwater supplies. Some of the water suppliers that rely on water diverted from Clear Lake, for example, are challenged with treatment of organics, *cryptosporidium*, pesticides, and other constituents in order to meet California Code of Regulations Title 22 and California Department of Public Health (CDPH) drinking water standards. Similarly, drinking water supplies diverted from the Delta often have naturally occurring contaminants such as organic carbon, which can cause municipal water treatment challenges.

Aquifers that are used for drinking water supply meet most drinking water standards, but must be continuously monitored to ensure the quality of the supplies are maintained. Some secondary constituents, such as manganese, have recently required treatment at municipal wells in the Region. Emerging contaminants such as hexavalent chromium, and potential downward revisions of the maximum contaminant levels to constituents such as arsenic also present future challenges to ensuring groundwater supplies meet drinking water standards. Treatment systems or alternative supply sources will be required at municipal wells that are impacted by current or future drinking water standards.

**Need: Abandoned Well Incentive Program, Davis-Woodland Water Supply Project-Intake Construction Project, Wastewater Storage Ponds & Disposal Improvements Project, and Water Tank Replacement Project to address the Water Quality Focus Area**

The objective of the Abandoned Well Incentive Program is to locate and properly destroy abandoned wells to protect groundwater quality. Improperly abandoned wells can become a conduit for low quality water in the upper aquifer to reach the lower aquifer. For that reason, County Ordinance and State destruction standards have been developed. The California Department of Water Resources publishes water well construction and destruction standards, such as in DWR Bulletin 74-90. The proper destruction of abandoned wells has long been recognized as a mandatory practice to protect groundwater quality.

The Davis-Woodland Water Supply Project-Intake Construction Project is described above, it addresses multiple Focus Areas.

The objective of the Wastewater Storage Ponds & Disposal Improvements Project is to improve to the District's wastewater system: Storage Pond Expansion– Currently the total wastewater pond storage capacity is approximately 7.4 million gallons. Pond storage capacity upon completion of the project will be 27.1 million gallons. Spray Disposal Field Improvements – The existing spray field disposal area is approximately 5.8 acres. The planned project consists of adding 1.0 acre (to Spray Field 2) and creating two additional spray field disposal areas (Spray Fields 3 and 4) for a combined total area of 8.7 acres. The completion of the proposed expansion of the District's existing wastewater storage ponds and sprayfield disposal will:

- Minimize accidental wastewater discharges to Lake Berryessa.
- Reduce public health risks by reducing contaminants in drinking water sources.
- Meet all wastewater discharge standards for a wastewater treatment plant that serves a Disadvantaged Community.

The objective of the Water Tank Replacement Project is to replace the three (3) existing redwood storage tanks with three (3) bolted steel storage tanks. The overall design capacity for the system, which is 400,000 gallons of storage, will remain unchanged. The project also includes updates to the existing pumping and electrical equipment that serves two pumps stations associated with the tanks and overall water system. The 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.

**Recreation**

Recreation and tourism provides significant economic benefit to the Region, particularly in the upper Cache Creek area around Clear Lake and the Upper Putah Creek area around Lake Berryessa. Current recreational opportunities in the Region include camping, fishing and boating as well as rafting on Class II to Class V whitewater rapids. Tourism opportunities in the Region include gaming, resorts with entertainment, and winetasting. The increase in tourism and recreational opportunities in the Westside Region should be managed and guided with an intention for preservation of the current rural character. In addition, improving water quality as well as maintaining sufficient water levels will be critical to preserving and expanding recreation and tourism opportunities within the Region in the future.

**Need: The Lower Putah Creek Restoration: Monticello Dam to Dry Creek Project and the Middle Creek Flood Damage Reduction and Ecosystem Project to address the Recreation Focus Area**

The Lower Putah Creek Restoration: Monticello Dam to Dry Creek Project is described above, it addresses multiple Focus Areas.

The Middle Creek Flood Damage Reduction and Ecosystem Restoration Project is a multipurpose project undertaken by the Lake County Watershed Protection District (District), the California Department of Water Resources and the U. S. Army Corps of Engineers (USACE). The Project lead is the USACE, with the District serving as the local sponsor. The Project will eliminate flood risk to 18 residential structures, numerous outbuildings and approximately 1,650 acres of agricultural land and will restore damaged habitat and the water quality of the Clear Lake watershed. Reconnection of this large, previously reclaimed area, as a functional wetland is anticipated to have a significant affect on the watershed health and the water quality of Clear Lake. The District desires to acquire approximately 160 acres for a portion of the property acquisition phase, which is currently in progress.

**Project List**

**Project Solicitation and Integration Process**

The project solicitation process began with a description of how potential project submittals would be evaluated and considered for inclusion into the IRWMP. The Project Team described from the beginning and throughout the effort that the project review and selection process would not be prescriptive (i.e., the decision for project inclusion and priority would not be determined based on some formulaic evaluation approach). In other words, even though each project submittal would be evaluated from the Project Information Form submitted, and a Total Criteria Score would be compiled, that score would only be one factor used when determining whether to include the

project in the Plan and how to prioritize it. The RWMG described that after receiving, evaluating, and reviewing all project submittals, they would propose a list of projects to include in the IRWMP and recommend a prioritization for each project chosen for inclusion. Then the recommendations made by the RWMG would be discussed with participants at a Stakeholder Input Meeting before any final decisions would be made about the projects.

Stakeholders were invited to submit any projects, programs, and action ideas they thought could help contribute to fulfilling the Plan objectives irrespective of the project's current funding, level of development, or readiness to proceed. The RWMG wanted to identify both projects and programs that were implementable and "ready to proceed", and also identify other ideas that have not yet been developed into mature project proposals. This approach was intended to provide a mechanism for stakeholders to share information and identify opportunities that could help contribute to fulfillment of the IRWMP objectives.

The RWMG received 132 project submittals during the first Call for Projects. The initial screening and review of the projects revealed that there were possible opportunities for additional integration and regionalization of project efforts. For example, several organizations submitted project ideas for an invasive species management program, which could potentially be combined into a single regional effort or a few collaborative efforts. Also, after the first Call for Projects some stakeholders expressed confusion about what types of projects, programs, and actions the Project Team had asked to be submitted for consideration in the IRWM Plan.

For these reasons, a second Call for Projects was issued October 22, 2012 to provide stakeholders with an opportunity to discuss, refine, and further integrate project ideas. A facilitated Project Integration Workshop was held October 24, 2012 in Clearlake for interested stakeholders to ask questions about the process, identify and discuss opportunities for project integration, and get technical assistance with preparation of Project Information Forms. Some projects were modified and new projects were submitted during the second Call for Projects a total of 141 projects will be included the Westside IRWMP.

#### Future Updates to the Project List

The Coordinating Committee plans to provide opportunities for regional stakeholders to propose changes to the Project List annually. New projects may be added, scored, and prioritized in accordance with the Plan objectives. Projects may also be removed at the request of that project's proponent, or once the project has been completed.

#### Project Scoring, Selection, and Prioritization Process

As introduced above, the process to decide which projects to include in the Plan and

how to prioritize them relied on: information submitted by the proponents that addressed a standard list of project criteria; expert judgment about the relevancy of the submitted projects; and Stakeholder discussions. The projects, programs and management actions submitted by the stakeholders were compiled, reviewed, and scored by the Consultant Team based on the information provided by the project proponents. No efforts were made to verify the information submitted by each project proponent. In cases where the information submitted was not clear to the Consultant Team, the Consultant Team contacted the project proponent for clarification. All of the submitted information was provided for stakeholder review and comment on the Westside website.

The list of projects to be included in this proposal was based on broad agreement to the following conditions:

1. The project has a strong project proponent
2. The project can meet the priorities for importance<sup>1</sup> and urgency<sup>2</sup> of the IRWMP objectives
3. The project can provide all of the necessary information required in the Proposition 84 Round 2 PSP; and the
4. Projects is ready to proceed

Projects to be included in this grant application:

Project	Description	Readiness to Proceed
1. Abandoned Well Incentive Program	The objective of the Abandoned Well Incentive Program is to locate and properly destroy abandoned wells to protect groundwater quality. Improperly abandoned wells can become a conduit for low quality water in the upper aquifer to reach the lower aquifer. For that reason, County Ordinance and State destruction standards have been developed. The California Dept. of Water Resources publishes water well construction and destruction standards, such as in DWR Bulletin 74-90. The proper destruction of abandoned wells has long been recognized as a mandatory practice to protect groundwater quality.	This program is exempt from CEQA and is ready to proceed.
2. Davis-Woodland Water Supply Project-Intake	The project is designed to increase habitat for threatened fish populations and is a key element of the WDCWA surface water project	The project is at 100% design stage, ready to receive bids for construction. An Environmental

<sup>1</sup> The “Importance” assigned to each project reflects the relative significance or consequences of implementing this project as compared to other projects within the Westside IRWMP.

<sup>2</sup> The “Urgency” assigned to each project reflects the relative degree to which this project warrants speedy attention or action as compared to other projects.

<p>Construction</p>	<p>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. Decreased pumping of groundwater will improve groundwater levels and quality diminished by years of pumping.</p>	<p>Impact Report was completed in January of 2010. All regulatory permits were secured by January of 2013.</p>
<p>3. Dixon Main Drain/V-Drain Enlargement Project</p>	<p>The DMDVD is designed to protect and improve water quality, improve water reuse efficiency, improve storm water management, creates a multipurpose flood management (drainage) program, protect and improves wildlife habitat, and implement the DWM plan. The achievement of these objectives will be measured by miles of channel enlarged, reduces channel maintenance impacts, acres of wetland created, acres treated with reused water, reduction in flooded acres, and increased acres of habitat.</p>	<p>The project is at 100% design stage and ready to proceed with construction bids. The project Environmental Impact Report was certified in February of 2009. All regulatory permits are in place and extensions were granted in February of 2013.</p>
<p>4. Lower Putah Creek Restoration: Monticello Dam to Dry Creek</p>	<p>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.</p>	<p>Major aspects of the project are exempt from CEQA, weed removal, native vegetation planting, etc. For the in-stream work, a mitigated Negative Declaration will be certified by the Solano County Water Agency Board of Directors at their August 2013 meeting. Programmatic permits by the California Department of Fish and Wildlife, the Army Corps of Engineers, and the Central Valley Regional Water Quality Control Board issued to the Lower Putah Creek Coordinating Committee cover work in and adjacent to Putah Creek</p>
<p>5. Middle Creek Flood Damage Reduction and Ecosystem Restoration Project</p>	<p>The Middle Creek Flood Damage Reduction and Ecosystem Restoration Project (Project) is a multipurpose project undertaken by the Lake County Watershed Protection District (District), the California Department of Water Resources (CDWR) and the U. S. Army Corps of Engineers (USACE). The Project lead is the USACE, with the District serving as the local sponsor. The Project will eliminate flood risk to 18 residential structures, numerous outbuildings and approximately 1,650 acres of agricultural land and will restore damaged habitat and the water quality of the Clear Lake</p>	<p>The project is exempt from CEQA and a notice was filed in May of 2004. No regulatory permits are required for the property acquisition.</p>

	<p>watershed. Reconnection of this large, previously reclaimed area, as a functional wetland is anticipated to have a significant affect on the watershed health and the water quality of Clear Lake. The District is requesting \$1 million funding to acquire approximately 160 acres for a portion of the property acquisition phase, which is currently in progress.</p>	
<p>6. Regional Collaborative Water Use Efficiency Program</p>	<p>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, detailed below.</p>	<p>This project is exempt from CEQA and no regulatory permits are required. The program is ready to proceed once funded.</p>
<p>7. Wastewater Storage Ponds &amp; Disposal Improvements</p>	<p>In direct response to the California Regional Water Quality Control Board, Central Valley Region (Regional Board), and fines issued to the Lake Berryessa Resort Improvement District (District) for the discharge of treated wastewater to Lake Berryessa, the District is required to complete these improvements to its wastewater treatment facility. Planned improvements to the District’s wastewater system are:                  Storage Pond Expansion– Currently the total wastewater pond storage capacity is approximately 7.4 million gallons. Pond storage capacity upon completion of the project will be 27.1 million gallons.                  Spray Disposal Field Improvements – The existing spray field disposal area is approximately 5.8 acres. The planned project consists of adding 1.0 acre (to Spray Field 2)</p>	<p>The project is at the 60% design stage with final design scheduled to be completed in April of 2013. A Mitigated Negative Declaration has been prepared and expected to be adopted in April of 2013 (public comment period ends March 29, 2013). Discussion with regulatory agencies for any required permits has been ongoing.</p>

	<p>and creating two additional spray field disposal areas (Spray Fields 3 and 4) for a combined total area of 8.7 acres. The completion of the proposed expansion of the District’s existing wastewater storage ponds and sprayfield disposal will:</p> <ul style="list-style-type: none"> <li>▪ Minimize accidental wastewater discharges to Lake Berryessa.</li> <li>▪ Reduce public health risks by reducing contaminants in drinking water sources.</li> <li>▪ Meet all wastewater discharge standards for a wastewater treatment plant that serves a Disadvantaged Community.</li> </ul>	
<p>8. Water Tank Replacement Project</p>	<p>The proposed project will replace the three (3) existing redwood storage tanks with three (3) bolted steel storage tanks. The overall design capacity for the system, which is 400,000 gallons of storage, will remain unchanged. The project also includes updates to the existing pumping and electrical equipment that serves two pumps stations associated with the tanks and overall water system.</p> <p>Project Objective: The completion of the proposed improvements to the water system will:</p> <ul style="list-style-type: none"> <li>▪ Provide reliable water supply of suitable quality for a DAC.</li> <li>▪ Reduce public health risks by reducing contaminants in drinking water sources.</li> <li>▪ Meet all drinking water standards for a DAC.</li> </ul>	<p>95% design plans, specifications, and cost estimates have been completed with final design to be completed by October 2013. The Project is Categorically Exempt from CEQA and no regulatory permits are required.</p>

**INTEGRATED ELEMENTS OF PROJECTS**

The projects that were submitted by stakeholders under the two Calls for Projects demonstrate the breadth of activities needed for the Westside to meet its water management objectives. These 141 projects were submitted by 39 different organizations (westsideirwm.com) that address, to some extent, all 24 of the Plan objectives. Projects submitted range from large-scale drinking water supply projects to habitat restoration programs, flood management projects, and invasive species management initiatives. The range of projects and programs present multiple opportunities for continued resource and project integration beyond the list of projects included in the Westside IRWMP.

Of these 141 projects, 8 projects best met the criteria of having a strong project proponent, meeting IRWMP objective priorities for importance and urgency, being able to provide all of the necessary information requirements of the PSP, and readiness to proceed. Given that and the broad scale of the Region, the projects included in this proposal are not closely integrated. While there is some overlap amongst the projects, the breadth and scale is actually far ranging. Even though they are not closely integrated, the fact that the 8 projects address 10 of the 13 goals and over half of the objectives in the IRWMP is by our estimates quite positive for the Region.

Two of the projects in this proposal are projects that combined two or more projects together to better collaborate efforts in the Region. The Regional Collaborative Water Use Efficiency Project is a combination of three projects: the Regional Collaborative Water Conservation Program (Project #72), the Commercial Washer Rebate Program (Project # 24), and the Large Landscape Water Efficiency Program (Project #28). The Lower Putah Creek Restoration: Monticello Dam to Dry Creek Project is a combination of two projects: the Duncan-Giovannoni Channel Restoration Study (Project #5) and the Putah Creek Interdam Reach Invasive Weed Control Project (Project #7).

The Water Tank Replacement and the Wastewater Storage Ponds and Disposal Improvements Projects are both sponsored by the Lake Berryessa Resort Improvement District (LBRID). Both Projects are designed to improve water quality by reducing public health risks by reducing contaminants in drinking water sources. There will be cost and time savings for the reporting and monitoring of these two projects by LBRID.

Four of the eight projects in the proposal benefit Disadvantaged Communities: the Middle Creek Flood Damage Reduction and Ecosystem Restoration Project, the Regional Collaborative Water Conservation Program, the Wastewater Storage Ponds and Disposal Improvements Project, and the Water Tank Replacement and Wastewater Storage Ponds.

Other projects in the proposal share linkages by addressing the same Focus Areas; Habitat, Recreation, and Water Quality. Both the Lower Putah Creek Restoration: Monticello Dam to Dry Creek Project and the Dixon Main Drain/V-Drain Enlargement Project have habitat restoration components. The Lower Putah Creek Restoration: Monticello Dam to Dry Creek and the Middle Creek Flood Damage Reduction and Ecosystem Projects both have components that address Recreation. The Abandoned Well Incentive Program, the Davis-Woodland Water Supply Project-Intake Construction, the Wastewater Storage Ponds & Disposal Improvements, and the Water Tank Replacement Projects all address Water Quality.

## **REGIONAL MAP**

A map showing the Westside Region is included in Exhibit A below. Exhibit C shows the projects included in this proposal and their spatial reference with the Region. Exhibit D shows the Disadvantaged Communities with the Region. Exhibit E shows the surface water and the groundwater basins within the Region.

## **COMPLETED WORK**

Work which has been completed or is expected to be completed prior to the grant award date for the projects in this proposal is summarized below (studies and data used for each Project is described in the Existing Data and Studies section that follows this section):

### **Davis-Woodland Water Supply Project-Intake Construction**

- Assessment and evaluation 1/2000-6/2009
- RD2035 Feasibility Study (completed in 2000)
- RD2035 Preliminary Design (completed 2002)
- Value engineering (completed 2003-2004)
- Conceptual design to include WDCWA (prepared 2007-2009)
- Final project Design (1/2/2003- 8/1/2012)
- RD2035/ WDCWA final design (completed 8/2012)
- Acquisition of right of way (12/1/2010-1/1/2013)
- Environmental documents, CEQA/NEPA (1/1/2004- 6/1/2010)
- Permitting 3/1/2010- 4/1/2013

### **Dixon Main Drain/V-Drain Enlargement Project**

- Acquiring permits 6/2009-8/2012
- Environmental documents 9/2007-2/2009
- Final project design 11/2007-3/2014
- Assessment and Evaluation 8/2001-5/2012
- Easement acquisition 10/2007-2/2014

### **Lower Putah Creek Restoration: Monticello Dam to Dry Creek**

- Adoption of Mitigated Negative Declaration 8/2013
- Extensions to Fish and Game Permits 6/213

### **Middle Creek Flood Damage Reduction and Ecosystem Restoration**

- Implementation Plan designed to improve the watershed health and water quality within Clear lake was adopted by Lake County in 1994
- Project related work began in 1995
- USACE Reconnaissance Study 2007
- Notice of Determination 5/13/2004
- Property Acquisition began 2005 with Flood protection Corridor Program (FPCP) funds granted by CDWR
- 6 million dollars in property has been acquired at fair market value since 2005

### **Wastewater Storage ponds and Disposal Improvements**

- CEQA 11/1/2012-4/2/2013
- Biological Assessment Survey and report Preparation 11/2/2012-2/28/2013
- Cultural Resources Study 12/4/2012-12/14/2012
- Wetland Delineation 12/19/2012-2/18/2013
- Initial study determination 2/1/2013- 2/22/2013
- Public review and comment period 2/23/2013- 3/25/2013
- Conceptual Report and Plans Preparation 7/2012-10/2012
- Field investigations, design criteria development, existing facilities review 7/2012-8/2012
- Construction plans, specification, and cost estimate preparation 7/2012-12/2013
- Coordinate with PG&E for overhead utility relocation permit 4/2013- 2/2014
- State water board 401 permit 4/2013- 9/2013
- US army corps of engineers 404 permit 4/2013-9/2013
- DFW 1602 permit 4/2013- 9/2013
- State water board NPDES permit 7/2013-11/2013

### **Water Tank Replacement Project**

- 95% Engineering Plans, Specifications, and Cost Estimates have been completed with Final Design scheduled to be completed in October 2013. Construction is anticipated to begin in January 2014.
- The project is categorically exempt from the California Environmental Quality Act.

### **EXISTING DATA AND STUDIES**

The following publications, studies, data, and reports were used to support and develop the projects and programs contained in this application.

### **Abandoned Well Incentive Program**

The following two publications were used to determine drinking water contaminants:

Bachman, S., et al. 2005. *California Groundwater Management*, second edition. A publication of the Groundwater Resources Association of California. 272 pp.

CV-Salts Salts and Nitrate Sources Pilot Implementation Study Report. February 2010. Available at: <http://www.cvsalinity.org/index.php/component/content/article/18-events/60-admin>

The following two publications were used to determine the relationship between groundwater quality and abandoned wells:

DWR Bulletin 74-81 and 74-90. California Well Standards  
Available at:

[http://www.water.ca.gov/pubs/groundwater/water\\_well\\_standards\\_bulletin\\_74-90/ca\\_well\\_standards\\_bulletin74-90\\_1991.pdf](http://www.water.ca.gov/pubs/groundwater/water_well_standards_bulletin_74-90/ca_well_standards_bulletin74-90_1991.pdf)

DWR. 2003. California Laws for Water Wells, Monitoring Wells, Cathodic Protection Wells, and Geothermal Heat Exchange Wells. State of California, Department of Water Resources, Division of Planning and Local Assistance. Available at: [http://www.water.ca.gov/pubs/groundwater/california\\_laws\\_for\\_wells\\_monitoring\\_wells\\_cathodic\\_protection\\_wells\\_geothermal\\_heat\\_exchange\\_wells\\_2003/ca\\_water\\_laws\\_2003.pdf](http://www.water.ca.gov/pubs/groundwater/california_laws_for_wells_monitoring_wells_cathodic_protection_wells_geothermal_heat_exchange_wells_2003/ca_water_laws_2003.pdf)

The following publication was used to determine drinking water contaminants:

Lawrence Livermore National Laboratory. 2002. Nitrate Contamination in California Groundwater: An Integrated Approach to Basin Assessment and Resource Protection. Available at: [http://www.swrcb.ca.gov/gama/docs/llnl\\_nitrate\\_wp\\_ucrl-151454.pdf](http://www.swrcb.ca.gov/gama/docs/llnl_nitrate_wp_ucrl-151454.pdf)

The following two publications were used to review trends of increasing nitrate in groundwater in Yolo County:

YCFCWCD. 2006. Groundwater Management Plan. Available at: <http://www.ycfcwcd.org/documents/gwmp2006final.pdf>

YCFCWCD. 2012. Regional Conjunctive Use Enhancement: Nitrate Fingerprinting and Groundwater Age Determination Study. Available

at: <http://www.yfcwcd.org/documents/NitrateFingerprintingGroundwaterAgeDecember2012.pdf>

The following publication was used for groundwater background information:

Yolo RWA. 2007. Yolo County Integrated Regional Water Management Plan (IRWMP), Water Resources Association of Yolo County. Available at: [http://www.yolowra.org/irwmp\\_documents.html](http://www.yolowra.org/irwmp_documents.html)

### **Davis-Woodland Water Supply Project-Intake Construction**

The following studies were used to determine water supply provided by the project:

Projected Average DWWSP Surface Water Storage Usage for 2016-2045, West Yost Associates, December 6, 2012.

Analysis of Water Supplies for the Davis Woodland Water Supply Project, West Yost Associates, January 10, 2012.

Preliminary Evaluation of Aquifer Storage Recovery for the Davis Woodland Water Supply Project, West Yost Associates.

The following studies were used to determine constituents of concern in the existing water supply and compares them to the surface water that will be provided by the project:

City of Woodland Water Focus Study, West Yost Associates, December 2012.

City of Davis Chemical Analyses of Davis Water, January 2013.

City of Davis 2010 Urban Water Management Plan Table 4-3, Brown and Caldwell, July 2011.

Surface water testing was done at the location of the proposed joint intake to provide the required raw water data necessary for obtaining a Domestic Water Supply Permit for the California Department of Public Health and to assist in the selection of an effective treatment process train. The first year and a half of data, August 2009 through December 2010, was analyzed and compared with historical Sacramento River water data in a report entitled, Sacramento River Water Quality Assessment for the Davis Woodland Water Supply Project, Trussell Technologies, March 2011. The range of values shown in Table 9 is from an update of that study and is from samples collected between January 2011 and November 2012. These are presented in a report entitled, Technical Memorandum Sacramento River Water Quality Assessment Update for the DWWSP. Additional "with project" constituent levels were taken from the City of Davis Urban

Water Management Plan and the City of Woodland Water Focus Study referenced above.

The effect of using surface water on groundwater levels was analyzed using a computer model of the groundwater basin. The results of this modeling were presented in a report, Surface Water Supply Feasibility Study Woodland California, LTD Engineering Inc., June 2004. Results of modeling show that when compared to conditions that will occur without the project, groundwater levels will rise due to reduced groundwater pumping by the two cities. The modeling looked at groundwater levels in the City Center of Woodland and at a location southeast of the City of Woodland.

Higher groundwater levels will reduce pumping cost for area agricultural groundwater users and for other communities in the area reliant on groundwater. Improvement in groundwater levels will also reduce subsidence. Subsidence (compaction of the groundwater reservoir) may lead to decreased aquifer storage capacity, deterioration in the water quality of the aquifers or damage to infrastructure. Both Woodland and Davis have experienced about three inches of subsidence between 1999 and 2005.

#### **Dixon Main Drain/V-Drain Enlargement Project**

The following publication was utilized to determine appropriate native vegetation to plant in the project area:

Holland and Keil. 1995. California Vegetation. Kendall/Hunt, Dubuque.

The following documents were utilized to determine local flooding issues and benefits to reducing local flooding:

Dixon Watershed Management Plan. August 2001. West Yost Associates.

Dixon Watershed Joint Powers Authority, Main Drain and V-Drain Hydraulic Study. May 2012. West Yost Associates.

Eastside Drain Project Conceptual Design Report, Dixon Watershed Joint Powers Authority. January 2008. West Yost Associates.

The following document were utilized to determine extend of wetlands created by the project:

Mitigation and Monitoring Plan, Dixon Main Drain and V-drain Enlargement Project. May 2009. Monk & Associates.

95% Complete Plans for Dixon Main Drain and V-Drain Enlargement Project. West Yost Associates.

The following document was utilized to determine extent of upland habitat to be created by project:

Plans for Dixon Main Drain and V-Drain Enlargement. West Yost Associates.

### **Lower Putah Creek Restoration: Monticello Dam to Dry Creek**

Various studies have been conducted to survey native fish on Putah Creek:

Fish in Putah Creek have been studied by U.C. Davis researchers, notably Moyle, Marchetti and Kiernan; and SCWA has sponsored annual electrofishing studies by Salamunovich (Normadeau Associates) at six monitoring stations below Putah Diversion Dam for over ten years. Lower Putah Creek hosts a unique assemblage of California native fishes including rainbow trout and Chinook salmon that all require cool water. Native species below Putah Diversion Dam that were formerly restricted to the first ten miles below Putah Diversion Dam (to Stevenson Bridge) spread an additional three miles downstream (to Pedrick Road) due to cooler, sustained flows under the new flow regime. A series of high flow years in the late 1990s flushed almost all exotic fish out of the upper reaches (above Pedrick Road) and they have not returned under Accord flows (Moyle, 2012).

Various studies have been conducted to better understand the native flora and fauna of Putah Creek:

Truan, M.L., A. Engilis Jr., and J.R. Trochet. 2010. Putah Creek Terrestrial Wildlife Monitoring Program: Comprehensive Report 1997-2009. Department of Wildlife, Fish, and Conservation Biology, Museum of Wildlife and Fish Biology. University of California, Davis, CA. Available at:  
[http://mwfb.ucdavis.edu/assets/reports/FINAL%20REPORT\\_Putah%20Ck%20Terrestrial%20Wildlife%20Monitoring%20Pgm%201997-2009\\_9-1-10.pdf](http://mwfb.ucdavis.edu/assets/reports/FINAL%20REPORT_Putah%20Ck%20Terrestrial%20Wildlife%20Monitoring%20Pgm%201997-2009_9-1-10.pdf)

Riparian Habitat Joint Venture. 2004. Version 2.0. The Riparian Bird Conservation Plan: a strategy for reversing the decline of riparian associated birds in California. California Partners in Flight. Available at: [http://www.prbo.org/calpif/htmldocs/riparian\\_v-2.html](http://www.prbo.org/calpif/htmldocs/riparian_v-2.html)

Stebbins, Robert C. 2003. A field Guide to Western Reptiles and Amphibians, third Edition Houghton Mifflin Company. New York, NY.

Walsh, Robert W. 2012. Email report on cavity nesting bird activity in Winters Putah Creek Park. Available at:  
[http://lpccc.watershedportal.net/Walsh,%20Robert%20W.,%20Email%Report%20on%20Cavity%20Nesting%20Birds%20at%20Winters%20Putah%20Creek%20Park%20\(2012\).docx](http://lpccc.watershedportal.net/Walsh,%20Robert%20W.,%20Email%Report%20on%20Cavity%20Nesting%20Birds%20at%20Winters%20Putah%20Creek%20Park%20(2012).docx)

The following study was utilized to determine the amount of invasive weeds controlled by the project:

EDAW Consulting. 2005. Lower Putah Creek Watershed Management Action Plan, Phase 1-Resource Assessments. Prepared for Lower Putah Creek Coordinating Committee. Available at: <http://lpccc.watershedportal.net/WMAP%202005%20Watershed%20Assessments/Lower%20Putah%20WMAP%20Vol%201%2012-05.pdf>

The following two local experts were consulted to quantitate the extent of rearing habitat created by the project:

Dr. Chris Yarnes (Putah Creek Trout): [cyarnes@putahcreektrout.org](mailto:cyarnes@putahcreektrout.org)  
Roger Bloom (California Department of Fish and Wildlife): [rbloom@dfg.ca.gov](mailto:rbloom@dfg.ca.gov)

The following publications was utilized to determine the number of obligate-riparian and dependent-riparian species:

Gardali, T. et al. 2006. Abundance patterns of landbirds in restored and remnant riparian forests on the Sacramento River, CA, USA. *Restoration Ecology*. 14(3):391-403.

### **Middle Creek Flood Damage Reduction and Ecosystem Restoration Project**

The following two publications were utilized to determine cause of algal blooms in Clear Lake:

Richerson, Peter J., et al. The Causes and Control of Algal Blooms in Clear Lake, Clean Lakes Diagnostic/Feasibility Study for Clear Lake, California. July 1994.

Richerson, Peter J, et al. 2008. Anthropogenic Stressors and Changes in the Clear Lake Ecosystem as Recorded in Sediment Cores. *Ecological Applications*. 18 (8) Supplement, pp A257-A283.

The following publication were utilized to determine the feasibility of the project:

Jones & Stokes Associates. 1997. Middle Creek Ecosystem Restoration Reconnaissance Study.

Stetson Engineers. 2012. Technical Memorandum, Tasks 4 & 5 Deliverable-Preliminary Water Availability Analysis for the Middle Creek Project.

The following publications were utilized to be in compliance with CEQA, NEPA, and local ordinances and helped formulate the flood reduction and ecosystem restoration aspects of the Project:

U.S. Army Corps of Engineers, Sacramento District. 2002. Middle Creek Study Economic Analysis.

U.S. Army Corps of Engineers, Sacramento District. Middle Creek, Lake County, California, Flood Damage Reduction and Ecosystem Restoration, final Integrated Feasibility Report and Environmental Impact Statement/ Environmental Impact Report. October 2003.

Lake County Community Development Department. 2004. Notice of Determination, Middle Creek Flood Damage Reduction and Ecosystem Restoration Project.

The following publication was utilized to determine increased visitor days by implementing the Project:

California Department of Water Resources. 2005. Middle Creek Flood Ecosystem Restoration Project Case Study: Benefit and Cost Analysis.

Harleson and Associates, Inc. 1997. Feasibility Study for Outrageous Water Park of City of Clearlake.

### **Wastewater Storage Ponds & Disposal Improvements**

The following studies have been conducted to inform the project's scope and design:

Summit Engineering. 1996. Capacity Study for the Wastewater Treatment and Disposal Facilities. Project No. 96009.

West Yost Associates. 2008. Technical Memorandum, Subject: Lake Berryessa Resort Improvement District Wastewater Treatment Plant Overview Evaluation.

Larry Walker Associates and Larson Consulting. 2011. Lake Berryessa Resort Improvement District Inflow/Infiltration Capacity Evaluation Report and Wastewater Facilities Improvement Plan.

West Yost Associates. 2012. Revised Water Balance Evaluation for Lake Berryessa Resort Improvement District Wastewater Treatment Facility.

### **PROJECT MAP**

A map for each of the projects submitted in this proposal are included in Exhibits F through K.

## **PROJECT TIMING AND PHASING**

Three of the projects in this proposal are separate and distinct phases of larger projects; the Davis-Woodland Water Supply Project-Intake Construction, the Dixon Main Drain/V-Drain Enlargement Project, and the Middle Creek Flood Damage Reduction and Ecosystem Restoration Project.

### **Davis-Woodland Water Supply Project-Intake Construction**

The Davis-Woodland Water Supply Project-Intake Construction Project will replace the largest unscreened surface water diversion facility on the Sacramento River. It is backed by historic agreements between the Woodland-Davis Clean Water Agency (WDCWA) and Reclamation District 2035. The joint use reduces the impacts associated with construction and operation of separate facilities. WDCWA costs for the project include the total cost of all WDCWA required facilities and 17% of the cost of all common use facilities. The project comprises the following elements: construction of the WDCWA portion of the common facilities for a 400 cfs capacity screened intake and pump station and construction of 36-inch discharge pipelines and appurtenant facilities from the intake to just south of the railroad tracks. The Intake Project is a separate and distinct phase of the much larger WDCWA Surface Water Project.

The WDCWA Surface Water Project has the right to divert up to 45,000 acre-feet of water per year from the Sacramento River. Water rights were granted in March 2011. Water diversions will be limited during summer and other dry periods. A more senior water right for 10,000 acre feet was purchased from the Conaway Preservation Group to provide summer water supply when diversions are constrained. Groundwater will continue to be used by Woodland and Davis to supplement supply when demand for water cannot be met with surface water supplies alone. The initial phase of the water treatment facility will be constructed to supply up to 30 million gallons of water per day, with an option for future expansion. Woodland's share of treated surface water will be 18 mgd, with Davis' share at 12 mgd. Approximately 5.1 miles of pipeline will transport "raw" water from the surface water intake on the Sacramento River to the water treatment plant located south of Woodland. From there, the treated water will travel 7.8 miles via pipeline to Davis and up to 1.4 miles to Woodland.

### **Dixon Main Drain/V-Drain Enlargement Project**

The Dixon Main Drain / V-Drain Enlargement Project (DMDVD) is Phase 1 of the larger Eastside Drain Projects identified in the Dixon Watershed Management Plan. The proposed project involves the enlargement of the DMDVD channels to provide an

increase in flow capacity. The project consists of two primary elements, enlargement of the Dixon Main Drain along Swan Road, and the enlargement of the existing V-Drain between Swan Road and the RD 2068 Intake Canal near Haas Slough. The project increases channel capacity of these constructed drainage facilities thereby reducing local flooding caused by regional drainage flows that exceed the existing channel capacity. The Dixon Main Drain will be enlarged by excavating the channel to provide a bottom width of six to eight feet (approximately two feet wider than existing), increasing the channel depth about two feet, and creating a 4:1 slope along the southern bank. The V-Drain will be enlarged by providing a bottom width of 26 to 40 feet (approximately 13 to 18 feet wider than existing), increasing the channel depth in some locations by about 1.5 feet, and creating a 4:1 slope along the western bank. Both channels will have a maintenance bench and low flow channel. The high-water flow bench areas, 4:1 side slopes and stockpile areas will be planted with native species. The enlarged channels will be fenced to exclude livestock access to the channel reducing animal caused erosion. New weir structures will improve agricultural water reuse. In addition to channel improvement the project includes replacement of culvert with a new conspan bridge, replacement of existing weir structures, replacement of the existing rail car bridge, relocation of an existing high line irrigation channel, realignment of the channel at its outfall, reconstruction of the Reclamation District 2068 trash rack in the outfall channel.

The Eastside Drain Project is still in the planning phase until funding can be secured to proceed with design and environmental compliance work.

#### Middle Creek Flood Damage Reduction and Ecosystem Restoration Project

The Middle Creek Flood Damage Reduction and Ecosystem Restoration Project (Project) is a multipurpose project undertaken by the Lake County Watershed Protection District (District), the California Department of Water Resources (CDWR) and the U. S. Army Corps of Engineers (USACE). The Project lead is the USACE, with the District serving as the local sponsor. The Project will eliminate flood risk to 18 residential structures, numerous outbuildings and approximately 1,650 acres of agricultural land and will restore damaged habitat and the water quality of the Clear Lake watershed. Reconnection of this large, previously reclaimed area, as a functional wetland is anticipated to have a significant affect on the watershed health and the water quality of Clear Lake. The District is requesting funding to acquire approximately 160 acres for a portion of the property acquisition phase, which is currently in progress. Each land acquisition phase is a distinct and separate phase of the overall project.

The District began acquiring property in 2005 utilizing Flood Protection Corridor Program (FPCP) funds granted by CDWR. One hundred sixty five acres of property has been acquired to date, with approximately 1,500 acres of additional properties to be acquired in the next two years utilizing existing funding. An additional 700 acres of property needs to be acquired to complete the property acquisition phase. The District

has designating funding for the Project design. Based on current estimates, the costs of Lands, Easements, Relocations and Rights-of-Way (LERRDs) will meet or exceed the required local cost share of the Project. This phase of the Project will acquire an additional 160 acres of property.

## **PROPOSED WORK**

### **1. Abandoned Well Incentive Program**

#### **Work to be performed**

Abandoned wells will be located and properly destroyed to protect groundwater quality throughout the Sacramento Westside Region. Up to 140 wells will be decommissioned in this program. Outreach involving local Farm Bureaus and Resource Conservation Districts (RCDs) will enroll volunteer well owners. Funds from the Abandoned Well Incentive Program will pay for licensed well contractors to properly destroy and decommission these wells.

Yolo County Flood Control and Water Conservation District (YCFWCWD) is the project proponent and will manage the 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.

The proposed Abandoned Well Incentive Program will have one full time coordinator position. This coordinator will assist with outreach, work with landowners, schedule the well contractors, assist County staff with well destruction permitting, and provide reporting information to track progress for the grant contract. The number of completed well destruction permits will be the main measure of program performance. This project is the same as a previously funded IRWMP implementation project in Santa Cruz County.

The main purpose of this program is to improve groundwater quality. California Water Code (Div. 7, Chapter 10, Article 1, Declaration of Policy, 13701). The Legislature finds and declares all of the following:

*(a) Improperly constructed and abandoned water wells, cathodic protection wells, groundwater monitoring wells, and geothermal heat exchange wells can allow contaminated water on the surface to flow down the well casing, thereby contaminating the usable groundwater.*

*(b) Improperly constructed and abandoned water wells, cathodic protection wells, groundwater monitoring wells, and geothermal heat exchange wells can allow unusable or low quality groundwater from one groundwater level to flow along the well casing to usable groundwater levels, thereby contaminating the usable groundwater.*

*(c) Contamination of groundwater poses serious public health and economic problems for many areas of the state.*

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.

### **Grant Reporting Tasks**

Progress reports will be submitted on a regular and consistent basis to meet the requirements of the Westside RWMG for disbursement of funds. The reports shall be submitted by email and hard copy on a quarterly basis. The progress reports shall provide a brief description of the work performed, project activities, milestones achieved, and other accomplishments or issues during the reporting period.

A final report will be prepared and submitted to the Westside RWMG upon completion of the project. The final report will include: 1) an executive summary; 2) a comparison between the planned completion date in the submittal and the actual timeline and explanation of the differences; and 3) a discussion of the major problems occurred in meeting the project goals and objectives as proposed and how they were resolved. The final report will also contain a detailed description and analysis of project results including whether the purpose of the project have been met, and a summary of the costs incurred and disposition of funds disbursed. The final report will be submitted electronically and a hard copy will be provided.

Invoices shall contain the date of the invoice, the time period covered by the invoice, the total amount due, and an original signature and date of the project's authorized representative. Invoices will itemized and based on the categories specified in the budget exhibit. The amount claimed for salaries/wages/consultant fees will include a calculation formula.

All applicable California Labor Code requirements, including prevailing wage provisions will be followed. If applicable, the Project Manager will, or through a third-party, adopt and enforce a Department of Industrial Relations-certified Labor Compliance Program (LCP) meeting the requirements of Labor Code section 1771.5.

### **Procedures for coordinating**

YCFWCDC will coordinate with local Farm Bureaus and Resource Conservation Districts (RCDs) to enroll volunteer well owners into the program. The procedure will be quite simple, the Farm Bureaus and RCDs maintain strong partnerships with the local landowners and will inform them of this program and solicit volunteers to retire unused wells. Partner agencies that YCFCCD will be coordinating with include: Yolo RCD, Yolo County Farm Bureau, Lake County Farm Bureau, and Solano County RCD.

### **Standards for Implementation**

Only certified C-47 well contractors will be utilized for decommissioning of wells. Wells will be properly destroyed according to state and county specifications. In accordance with the requirements, the contractor shall:

1. Obtain and review a well completion report.
2. Side-scan video survey well to refusal to determine the casing type, integrity, and location of the screened intervals.
3. Excavate around well casing to 5' below grade surface (bgs) and remove top 5' of casing.
4. Install 5' temporary conductor to top of exposed casing. Temporary conductor should be slightly oversized to fit closely around well casing.
5. Bail well to refusal if video scan reveals excessive amount of fill.
6. Mechanically perforate the solid sections of well casing between screened intervals and the solid section of steel well casing above the first set of perforations to 5' past the bottom of the sanitary seal. Perforating shall be completed with a hydraulic mills knife tool with a minimum of 4 perforations per foot.
7. Side-scan video survey well to identify existence and placement of perforations.
8. Fill the well with a 10.3 sac cement grout once the perforations have been completed. The cement shall be installed using a tremie pipe that will extend to within five (5) feet of the bottom of the well casing. The cement shall be pumped through the tremie pipe, into the well, and the tremie pipe shall be withdrawn as the well fills with grout. Installing the grout through the tremie pipe will ensure a bottom-up fill and will help prevent any bridging. Fill well until grout reaches temporary casing. Assume 120% borehole diameter of fill material required.
9. Remove temporary conductor to form mushroom cap.
10. Refill excavated area with native soil.

### **Standards for Implementation**

All construction, health, and safety industry standards will be followed for implementation of the project.

### **Performance Measures and Monitoring Plan**

Presented in the table below is the planned monitoring, assessment, and performance measures that will demonstrate that the project will meet its intended goals and achieve measurable outcomes and provide value to the State of California.

Monitoring, Assessment, and Performance Measures				
Project Goals	Desired Outcomes	Targets	Performance Indicators	Measurement Tools & Methods
Protect groundwater quality	Properly destroy abandoned wells to protect groundwater quality	140 wells	Number of wells properly destroyed	The number of well destruction permits completed will be used to measure project performance

**CEQA status, NEPA, other laws**

This program is exempt from CEQA. Decommissioning wells under this program would also be exempt under CEQA (several exemptions could apply, one would be Section 15304-Minor Alterations to Land). County grading permits could be required depending on county requirements and site conditions. Any required permits will be secured prior to retirement of any wells. The process and timing is different for each county (Solano County for example typically issues grading permits within 30 days of a complete application).

**Deliverables**

If awarded funds, YCFCWC will submit Quarterly Reports, Invoices, and a Final report as prescribed in the contract with the Westside RWMG as described above.

**2. Davis-Woodland water Supply Project-Intake Construction**

**Work to be performed**

The Sacramento River Joint Intake Project will replace the largest unscreened surface water diversion facility on the Sacramento River. It is backed by historic agreements between the Woodland Davis Clean Water Agency (WDCWA) and Reclamation District 2035 (RD 2035). The joint use reduces the impacts associated with separate facilities. WDCWA costs for the project include the total cost of all WDCWA required facilities and 17% of the cost of all common use facilities. This grant application is for the WDCWA costs of the intake only. RD 2035 is pursuing funding for their portion from a variety of state and local sources.

The project comprises the following elements: construction of the WDCWA portion of the common facilities for a 400 cfs capacity screened intake and pump station and

construction of 36-inch discharge pipelines and appurtenant facilities from the intake to just south of the railroad tracks.

The intake is a key element of the WDCWA surface water project. The surface water project has the right to divert up to 45,000 acre-feet of water per year from the Sacramento River. Water rights were granted in March 2011. Water diversions will be limited during summer and other dry periods. A more senior water right for 10,000 acre feet was purchased from the Conaway Preservation Group to provide summer water supply when diversions are constrained. Groundwater will continue to be used by Woodland and Davis to supplement supply when demand for water cannot be met with surface water supplies alone. The initial phase of the water treatment facility will be constructed to supply up to 30 million gallons of water per day, with an option for future expansion. Woodland's share of treated surface water will be 18 mgd, with Davis' share at 12 mgd. Approximately 5.1 miles of pipeline will transport "raw" water from the surface water intake on the Sacramento River to the water treatment plant located south of Woodland. From there, the treated water will travel 7.8 miles via pipeline to Davis and up to 1.4 miles to Woodland.

The project is designed to increase habitat for threatened fish populations and is a key element of the WDCWA surface water 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. Decreased pumping of groundwater will improve groundwater levels and quality diminished by years of pumping.

### **Grant reporting tasks**

Progress reports will be submitted on a regular and consistent basis to meet the requirements of the Westside RWMG for disbursement of funds. The reports shall be submitted by email and hard copy on a quarterly basis. The progress reports shall provide a brief description of the work performed, project activities, milestones achieved, and other accomplishments or issues during the reporting period.

A final report will be prepared and submitted to the Westside RWMG upon completion of the project. The final report will include: 1) an executive summary; 2) a comparison between the planned completion date in the submittal and the actual timeline and explanation of the differences; and 3) a discussion of the major problems occurred in meeting the project goals and objectives as proposed and how they were resolved. The final report will also contain a detailed description and analysis of project results including whether the purpose of the project have been met, and a summary of the costs incurred and disposition of funds disbursed. The final report will be submitted electronically and a hard copy will be provided.

Invoices shall contain the date of the invoice, the time period covered by the invoice, the total amount due, and an original signature and date of the project’s authorized representative. Invoices will itemized and based on the categories specified in the budget exhibit. The amount claimed for salaries/wages/consultant fees will include a calculation formula.

All applicable California Labor Code requirements, including prevailing wage provisions will be followed. If applicable, the Project Manager will, or through a third-party, adopt and enforce a Department of Industrial Relations-certified Labor Compliance Program (LCP) meeting the requirements of Labor Code section 1771.5.

**Standards for Implementation**

All construction, health, and safety industry standards will be followed for implementation of the project. In-take screens will be constructed to meet the standards of the California Department of Fish and Wildlife, U.S. Fish and Wildlife Service, and National Marine Fisheries Service standards for anadromous fish.

**Performance measures and monitoring plans for the projects listed**

Presented in the table below are the planned monitoring and performance measures that will demonstrate that the Project will meet its intended goals, achieve measureable outcomes and provide value to the State of California.

Monitoring, Assessment, and Performance Measures				
Project Goals	Desired Outcomes	Targets	Performance Measures	Measurement Tools & Methods
Preserve and enhance habitat and biological diversity of native and migratory species.  Promote and enhance water related recreational opportunities within the Region.  Increase availability of suitable life-cycle habitat for threatened, endangered, or	Protect juvenile Chinook salmon, steelhead trout and green sturgeon by replacing the largest unscreened surface water diversion facility on the Sacramento River.	All Sacramento River water diverted to the WDCWA will be screened to prevent the entrainment of migrating fish.	Completed construction of the Sacramento River Joint Intake Project in compliance with the requirements of the EIR, California Department of Fish and Wildlife Protest Dismissal Agreement and the positive barrier fish screen criteria of the Department of Fish and Wildlife, the U.S. Fish and Wildlife Service and the	Implement the Davis-Woodland Water Supply Project Positive Barrier Fish Screen Performance Evaluation and Monitoring Plan as required in the California Department of Fish and Wildlife Protest Dismissal Agreement.

imperiled native fish.			National Marine Fisheries Service.	
<p>Provide new water supply to meet existing needs.</p> <p>Provide reliable water supplies of suitable quality for multiple beneficial uses.</p> <p>Promote reasonable use of water and watershed resources.</p>	<p>Reduce dependence on groundwater for WDCWA member cities of Woodland and Davis.</p>	<p>Provide up to 30 MGD of surface water of the WDCWA member cities of Woodland and Davis to be used conjunctively with existing groundwater systems.</p>	<p>Maximize the use of surface water subject to dry season availability under California Term 91 regulations and Bureau of Reclamation Lake Shasta critical year condition declaration.</p>	<p>The Water Right Permits (in particular Permit 20281, Term 23) require the WDCWA to measure the instantaneous diversion rate, the amount diverted each day and the cumulative amount diverted, to maintain records of the daily readings, and to post each daily measurement on a publicly accessible website within forty-eight (48) hours after the measurement is made.</p>
<p>Improve drinking water quality.</p> <p>Reduce public health risks by reducing contaminants of concern in drinking water sources.</p> <p>Meet all drinking water standards within the Region.</p>	<p>Reduce levels of TDS, arsenic, Hexavalent Chromium, nitrate and hardness in drinking water.</p>	<p>Reduce levels of TDS, arsenic, Hexavalent Chromium, nitrate, and hardness by meeting drinking water standards and user requirements.</p>	<p>Measured levels of TDS, arsenic, Hexavalent Chromium, nitrate and hardness in existing groundwater supply and future surface water supply.</p>	<p>Chemical analysis of water as reported in each City's annual water quality report.</p>
<p>Improve water quality of treated wastewater.</p> <p>Meet all wastewater discharge standards within the Region.</p> <p>Preserve, improve and manage water</p>	<p>Reduce levels of Selenium, Manganese, TDS and Boron in water supply.</p>	<p>Reduce levels to minimize required upgrades at wastewater treatment plants and meet all state and federal wastewater discharge regulations.</p>	<p>Compliance with all relevant discharge quality standards.</p>	<p>Report of waste discharge from the City's wastewater treatment plants.</p>

quality to meet designated beneficial uses for all water bodies within the Region.				
Provide 100% reliability of municipal water supplies of appropriate quality to meet forecasted demand with the Region.	Diversify the water supply portfolio by supplying surface water to two cities currently 100% reliant on groundwater.	0 days per year where water suppliers invoke drought ordinances and require rationing.	Maximize the use of surface water subject to dry season availability under California Term 91 regulations and The Bureau of Reclamation Lake Shasta critical year condition declaration.	Monitor number of days water suppliers invoke drought ordinances and number of days rationing is required.
Build a single intake to minimize adverse impacts to the Sacramento River riparian corridor and reduce the risk of large erosion events.  Support regional collaborative projects that provide benefits for multiple agencies.	One joint use intake will reduce impacts from disturbance during construction and benefit multiple agencies.	Construction of a single intake facility serving two agencies and providing water for both agricultural and urban use.	Agreement between RD 2035 and WDCWA for constructing a single intake for both urban and agricultural use.	Successful construction of joint intake facility.
Restore Native vegetation and form and function along riparian corridors.  Protect and enhance habitat and biological diversity of native and migratory species.	Increase habitat for the Giant Garter Snake.	Existing habitat impacted by construction will be replaced at a 3:1 ratio.	Project will provide a total of 2.19 acres of new habitat.	Habitat will be created and measured under the mitigation monitoring requirements of the EIR.
Meet demand reduction of 20% by 2020 statewide water conservation targets.	Meet or exceed goal.	20% reduction or more by 2020.	City monitoring of per capita use.	Water meters will be used to measure use.

### **CEQA status, NEPA, other laws**

The project is at 100% design stage, ready to receive bids for construction. An Environmental Impact Report was completed in January of 2010. All regulatory permits were secured by January of 2013.

### **Description of deliverables**

If awarded funds, WDCWA will submit Quarterly Reports, Invoices, and a Final report as prescribed in the contract with the Westside RWMG as described above.

## **3. Dixon Main Drain/V-Drain Enlargement Project**

### **Work to be performed**

The Dixon Main Drain / V-Drain Enlargement Project (DMDVD) is Phase 1 of the larger Eastside Drain Projects identified in the Dixon Watershed Management Plan. The proposed project involves the enlargement of the DMDVD channels to provide an increase in flow capacity. The project consists of two primary elements, enlargement of the Dixon Main Drain along Swan Road, and the enlargement of the existing V-Drain between Swan Road and the RD 2068 Intake Canal near Haas Slough. The project increases channel capacity of these constructed drainage facilities thereby reducing local flooding caused by regional drainage flows that exceed the existing channel capacity. The Dixon Main Drain will be enlarged by excavating the channel to provide a bottom width of six to eight feet (approximately two feet wider than existing), increasing the channel depth about two feet, and creating a 4:1 slope along the southern bank. The V-Drain will be enlarged by providing a bottom width of 26 to 40 feet (approximately 13 to 18 feet wider than existing), increasing the channel depth in some locations by about 1.5 feet, and creating a 4:1 slope along the western bank. Both channels will have a maintenance bench and low flow channel. The high-water flow bench areas, 4:1 side slopes and stockpile areas will be planted with native species. The enlarged channels will be fenced to exclude livestock access to the channel reducing animal caused erosion. New weir structures will improve agricultural water reuse. In addition to channel improvement the project includes replacement of culvert with a new conspan bridge, replacement of existing weir structures, replacement of the existing rail car bridge, relocation of an existing high line irrigation channel, realignment of the channel at its outfall, reconstruction of the RD2068 trash rack in the outfall channel.

The DMDVD is designed to protect and improve water quality, improve water reuse efficiency, improve storm water management, creates a multipurpose flood management (drainage) program, protect and improves wildlife habitat, and implement the DWM plan. The achievement of these objectives will be measured by miles of

channel enlarged, reduces channel maintenance impacts, acres of wetland created, acres treated with reused water, reduction in flooded acres, and increased acres of habitat.

### **Grant reporting tasks**

Progress reports will be submitted on a regular and consistent basis to meet the requirements of the Westside RWMG for disbursement of funds. The reports shall be submitted by email and hard copy on a quarterly basis. The progress reports shall provide a brief description of the work performed, project activities, milestones achieved, and other accomplishments or issues during the reporting period.

A final report will be prepared and submitted to the Westside RWMG upon completion of the project. The final report will include: 1) an executive summary; 2) a comparison between the planned completion date in the submittal and the actual timeline and explanation of the differences; and 3) a discussion of the major problems occurred in meeting the project goals and objectives as proposed and how they were resolved. The final report will also contain a detailed description and analysis of project results including whether the purpose of the project have been met, and a summary of the costs incurred and disposition of funds disbursed. The final report will be submitted electronically and a hard copy will be provided.

Invoices shall contain the date of the invoice, the time period covered by the invoice, the total amount due, and an original signature and date of the project's authorized representative. Invoices will itemized and based on the categories specified in the budget exhibit. The amount claimed for salaries/wages/consultant fees will include a calculation formula.

All applicable California Labor Code requirements, including prevailing wage provisions will be followed. If applicable, the Project Manager will, or through a third-party, adopt and enforce a Department of Industrial Relations-certified Labor Compliance Program (LCP) meeting the requirements of Labor Code section 1771.5.

### **Standards for Implementation**

All construction, health, and safety industry standards will be followed for implementation of the project.

### **Performance measures and monitoring plans for the projects listed**

Presented in the table below are the planned monitoring and performance measures that will demonstrate that the Project will meet its intended goals, achieve measureable outcomes and provide value to the State of California.

Monitoring, Assessment, and Performance Measures				
Project Goals	Desired Outcomes	Targets	Performance Indicators	Measurement Tools and Methods
Provide Adequate Flood Protection, Practice Integrated Flood Management and Resolve Water Related Conflicts.	Reduce localized flooding in project area.	Provide capacity for runoff directly tributary to the project in the 10-year and 100-year storms.	Runoff from the 10 and 100-year storms will be contained within the channel banks of the project prior to the Eastside Drain Project construction.	Hydrologic and hydraulic modeling results for the project along with visual monitoring of flooding during storm events.
	Construct an outfall for a regional watershed including both urban and rural lands.	Provide an outfall with capacity in the 10-year storm for the Eastside Drainage Project.	Runoff from the 10-year storm will be contained within the channel banks of the project after to the Eastside Drain Project is constructed.	Hydrologic and hydraulic modeling results for the Eastside Drainage Project along with visual monitoring of flooding during storm events.
Restore Native Vegetation, restore ecosystems, expand environmental stewardship.	Create wetlands by enlarging channel section and creating floodplain bench.	Create 5 acres of wetlands.	Low flow channels with perennially flowing water and floodplain benches and channel side slopes that remain saturated long enough during each wet season to promote sustainable growth of hydrophytic vegetation.	As-Built Report prepared and submitted to the ACOE, RWQCB, and the Department of Fish and Wildlife. Detailed annual monitoring reports for five years containing hydrology data, plant community sampling data and summaries and photographic documentation. Photos, taken from the same location each year will allow a visual analysis of the year to year changes that occur in the channels and created floodplains benches.
	Restore native vegetation by	Establish 50 acres of native	Seed approximately 50	Upland area monitoring will

	planting upland areas.	vegetation on upland habitat.	acres of uplands with a variety of native perennial grasses. Monitor and maintain for two years. Within two years, there will be at least 50% visual coverage by native grasses of the area seeded.	include photo point establishment and photo monitoring annually to document plant survival and growth, quarterly surveying of planted vegetation to determine survival and semi-annual (spring and fall) surveys to determine need for weed control.
Address Pollution Sources, improve water quality, reduce instream erosion, protect surface water quality.	Reduce erosion and improve water quality by fencing channel from livestock.	Protect 24 acres of land currently accessible to grazing cattle with exclusionary fencing.	Construct 8,600 feet of permanent fence along the western project boundary to prevent cattle from accessing the channel.	Construction management and inspections of the project documented with as constructed drawings.
	Reduce erosion by reducing channel velocity through enlarging and planting channel section.	Decrease water velocity in large storm events.	Water velocity decreases with channels flowing at capacity through constructing a larger channel section with 4:1 slope banks and high water flood bench and planting channel bench and banks above the bench.	Construction management and inspections of the project documenting channel construction and planting. Inspections of channels during vegetation and wetlands monitoring.

**Status of acquisition of land or rights-of-way as applicable**

Landowner construction easements are in place and will be executed in the fall of 2013 when funding becomes available.

**CEQA status, NEPA, other laws**

The project is at 100% design stage and ready to proceed with construction bids. The project Environmental Impact Report was certified in February of 2009. All regulatory permits are in place and extensions were granted in February of 2013.

### **Description of deliverables**

If awarded funds, the Dixon Regional Watershed Joint Powers Authority will submit Quarterly Reports, Invoices, and a Final report as prescribed in the contract with the Westside RWMG as described above.

## **4. Lower Putah Creek Restoration: Monticello Dam to Dry Creek**

### **Work to be performed**

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 (see Figure 1) 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.

### **Grant reporting tasks**

Progress reports will be submitted on a regular and consistent basis to meet the requirements of the Westside RWMG for disbursement of funds. The reports shall be submitted by email and hard copy on a quarterly basis. The progress reports shall provide a brief description of the work performed, project activities, milestones achieved, and other accomplishments or issues during the reporting period.

A final report will be prepared and submitted to the Westside RWMG upon completion of the project. The final report will include: 1) an executive summary; 2) a comparison between the planned completion date in the submittal and the actual timeline and explanation of the differences; and 3) a discussion of the major problems occurred in meeting the project goals and objectives as proposed and how they were resolved. The final report will also contain a detailed description and analysis of project results including whether the purpose of the project have been met, and a summary of the costs incurred and disposition of funds disbursed. The final report will be submitted electronically and a hard copy will be provided.

Invoices shall contain the date of the invoice, the time period covered by the invoice, the total amount due, and an original signature and date of the project’s authorized representative. Invoices will itemized and based on the categories specified in the budget exhibit. The amount claimed for salaries/wages/consultant fees will include a calculation formula.

All applicable California Labor Code requirements, including prevailing wage provisions will be followed. If applicable, the Project Manager will, or through a third-party, adopt and enforce a Department of Industrial Relations-certified Labor Compliance Program (LCP) meeting the requirements of Labor Code section 1771.5.

**Standards for Implementation**

All construction, health, and safety industry standards will be followed for implementation of the project.

**Performance measures and monitoring plans for the projects listed**

Presented in the table below are the planned monitoring and performance measures that will demonstrate that the Project will meet its intended goals, achieve measureable outcomes and provide value to the State of California.

Monitoring, Assessment, and Performance Measures				
Project Goals	Desired Outcomes	Targets	Performance Indicators	Measurement Tools and Methods
Preserve and enhance water related recreational opportunities in the Interdam Reach.	Reduce weeds (especially Himilayan blackberry thickets) that inhibit public access to public lands.	Provide access to waters edge unobstructed by blackberry thickets	Number of occurrences and area of blackberry thicket controlled.	Photographs before and after.
	Higher populations of salmonids	Provide 2500 feet of new side	Higher numbers of fish caught per	Fish and wildlife monitoring,

	resulting from increased rearing habitat.	channel rearing habitat (four locations).	hour fishing.	species counts and observed nesting behavior compared with baseline studies.
Protect and enhance habitat and biological diversity of native and migratory species.	Increased abundance and diversity of wildlife, increased area dominated by native fish.	25% increase in species counts by river mile in restored reaches; 20% increase in nesting by obligate riparian and riparian dependent species; perennial salmonid habitat below Putah Diversion Dam extended by two miles, (50%) from Dry Creek to Highway 505.	Increased number of species per river mile in restored reaches; increased nesting by obligate riparian species; increased length of habitat occupied by salmonids in October surveys.	Fish and wildlife monitoring, species counts and observed nesting behavior compared with baseline studies.
	Lower water temperature.	2 degrees Celsius lower water temperature.	Lower water temperature at downstream end of project compared with baseline data.	Temperature loggers.
Improve the form and function of degraded natural channels.	Increased area of floodplains adjacent to the flow channel that support natural recruitment of riparian vegetation and associated habitat.	13 acres of new floodplains averaging 50 feet of width.	New floodplains.	As built surveys.
Implement invasive species management plan.	Reduced number of occurrences and area occupied by invasive plants.	90 percent reduction in invasive plants.	Reduced weed populations.	Updated weed maps.
Restore native vegetation form and function in riparian and aquatic corridors.	Restored native vegetation abundance and diversity.	13 acres of restored floodplain, 20 acres of weed resistant native vegetation replacing invasive weeds; 40 acres of native grassland with cottonwood overstory.	Enhanced riparian vegetation.	Photo documentation before and after restoration.

### **CEQA status, NEPA, other laws**

Major aspects of the project are exempt from CEQA, weed removal, native vegetation planting, etc. For the in-stream work, a mitigated Negative Declaration will be certified by the Solano County Water Agency Board of Directors at their August 2013 meeting. Programmatic permits by the California Department of Fish and Wildlife, the Army Corps of Engineers, and the Central Valley Regional Water Quality Control Board issued to the Lower Putah Creek Coordinating Committee cover work in and adjacent to Putah Creek.

### **Description of deliverables**

If awarded funds, LPCCC will submit Quarterly Reports, Invoices, and a Final report as prescribed in the contract with the Westside RWMG as described above.

## **5. Middle Creek Flood Damage Reduction and Ecosystem Restoration Project**

### **Work to be performed**

The Middle Creek Flood Damage Reduction and Ecosystem Restoration Project (Project) is a multipurpose project undertaken by the Lake County Watershed Protection District (District), the California Department of Water Resources (CDWR) and the U. S. Army Corps of Engineers (USACE). The Project lead is the USACE, with the District serving as the local sponsor. The Project will eliminate flood risk to 18 residential structures, numerous outbuildings and approximately 1,650 acres of agricultural land and will restore damaged habitat and the water quality of the Clear Lake watershed. Reconnection of this large, previously reclaimed area, as a functional wetland is anticipated to have a significant affect on the watershed health and the water quality of Clear Lake. The District is requesting \$1 million funding to acquire approximately 160 acres for a portion of the property acquisition phase, which is currently in progress.

The Project area was "reclaimed" between 1900 and 1958 by constructing levees, creating a slough and reclaiming approximately 1,650 acres of lake bottom, shoreline wetlands and floodplain for agricultural purposes. The levees in the Project area have settled up to three feet below design grade, are prone to slope failure and have inadequate cross-section. These levees were never constructed to proper standards and are the most prone to failure during a major flood event. The Corps has determined that the levees provide only a four-year level of protection (the levees were designed to provide a 50-year level of protection) and will overtop during a 35-year flood event, unless emergency flood fight measures are implemented. The area was evacuated in 1983, 1986 and 1998, with evacuation imminent in 1995. Additionally, the levee nearly failed in 2011, when Clear Lake was below the normal full level.

In 1994, the EPA Clean Lakes Diagnostic/Feasibility Study for Clear Lake was completed. Sediment nutrients are primarily responsible for the cultural eutrophication of Clear Lake and the resulting chronic blue-green algal blooms. The Clean Lakes Study identified a significant degradation in Clear Lake's water quality between 1920 and 1940. Sediment cores collected by the University of California, Davis (UCD), shows an abrupt increase in sedimentation rates around 1927, corresponding to the beginning of the large-scale reclamation of the Project area, start of strip mining at the Sulphur Bank Mine, and other major construction projects in the Clear Lake watershed. The Clean Lakes Study recommends numerous actions be taken to reduce the frequency and magnitude of the blue-green algal blooms, including erosion control and wetland and riparian restoration. The County of Lake adopted an Implementation Plan on July 19, 1994 identifying the recommended actions and a time line for their implementation.

The Plan is to improve the watershed health of the Clear Lake watershed and improve the quality of Clear Lake. The Project is an integral part of the Implementation Plan and the restoration of Clear Lake water quality.

By improving the water quality of water entering Clear Lake, a reduction of 33% in the chlorophyll-a concentrations in Clear Lake is anticipated. Improved water quality will benefit urban, agriculture, environmental and recreation uses of Clear Lake. Of note, improved water quality will improve the source water quality for numerous public water supplies utilizing Clear Lake as their source, improving the water quality they can provide to their customers. These public water supplies serve 33,252 persons (2010 Census), 28,781 of which are defined as residing in Disadvantaged Communities.

Of the historic 9,300 acres of freshwater wetlands that existed in the Clear Lake Basin, approximately 7,520 acres (80 percent) have been lost or severely impacted. The Project will restore up to 1,400 acres of the 7,520 acres of historic wetlands in the Clear Lake Basin that have either been lost or severely impacted. This is a 79 percent increase in the Basin's existing wetland habitat. Restored habitat includes open water, seasonal wetlands, instream aquatic habitat, shaded aquatic habitat, and perennial wetlands. This addresses Goal 8: Protect and enhance habitat and biological diversity of native and migratory species.

The levees "protecting" the reclaimed land are estimated by the USACE to have over a 26 percent annual chance of failure., placing the residents, property owners and infrastructure "protected" by the levee at high risk of flooding. Acquiring property, relocating residents and retrofitting infrastructure will reduce flood risk, addressing Goal 10: Reduce the risks of disruptive natural and human-caused disturbances affecting the region's water resources including flooding, fire and significant institutional interruptions that reduce resources management services.

The Project addresses the following Goals of the Westside Sacramento IRWM:

4. Improve water-related public health across the region and emphasize improvements for populations most in need.
5. Preserve and enhance water-related recreational opportunities.
6. Preserve, improve, and manage water quality to meet designated beneficial uses of all water bodies within the region.
8. Protect and enhance habitat and biological diversity of native and migratory species.
9. Provide reliable water supplies of suitable quality for multiple beneficial uses (e.g., urban, agriculture, environmental, and recreation) within the region.
10. Reduce the risks of disruptive natural and human-caused disturbances affecting the region's water resources including flooding, fire and significant institutional interruptions that reduce resources management services.

The Project addresses the following Objectives of the Westside Sacramento IRWM:

3. Restore native vegetation/form/function in riparian/aquatic corridors
6. Increase availability of suitable life-cycle habitat for T/E/I native fish
13. Maintain and increase water-related recreational opportunities.
14. Provide adequate flood protection
19. Address pollutant sources to meet TMDL targets
21. Reduce Public health risks by reducing contaminants in drinking water sources

The Project will be monitored as follows:

- Restored habitat types will be monitored to ensure restoration by the USACE in accordance with their Monitoring and Adaptive Management Plan.
- Clear Lake water quality is cooperatively monitored by the CDWR, the District and the Central Valley Regional Water Quality Control Board. Changes in water quality resulting from Project implementation will be documented in this long-term data set.

Work on the Project began in 1995 with the USACE Reconnaissance Study, which was completed in 1997. The Integrated Feasibility Study/Environmental Impact Report/Environmental Impact Statement was completed in 2003, with certification of the EIR in 2004. The USACE Project was authorized in 2007. Start of the Design phase of the project is dependent on appropriation of Federal funds for the Project. The local share of the Design costs is designated within the District's budget.

The overall Project will:

- Acquire properties within the one percent annual chance (100-year) floodplain to allow the lands to be inundated and flooded as naturally occurred.
- Mitigate flood impacts on State Highway 20 and Nice-Lucerne Cutoff roadway by raising them above the one percent annual chance flood elevation.
- Mitigate flooding impact to 115 KV PG&E transmission line.

- Restore natural flow channels throughout the Project area.
- Remove portions a substandard Federal/State levee, allowing Clear Lake to inundate portions of the Project Area and stream flows to flow through the area. A majority of the Project Area will be flooded during normal periods, while the upper portions will only be flooded during high flow events and when the level of Clear Lake is above normal.
- Areas are to be revegetated to enhance the natural revegetation process, improve the water quality benefits and restore wetland and riparian habitats for native species.
- The Project area would again become part of Clear Lake and will require minimal long-term operation and maintenance costs.

The District began acquiring property in 2005 utilizing Flood Protection Corridor Program (FPCP) funds granted by CDWR. One hundred sixty five acres of property has been acquired to date, with approximately 1,500 acres of additional properties to be acquired in the next two years utilizing existing funding. An additional 700 acres of property needs to be acquired to complete the property acquisition phase. The District has designated funding for the Project design. Based on current estimates, the costs of Lands, Easements, Relocations and Rights-of-Way (LERRDs) will meet or exceed the required local cost share of the Project. This phase of the Project will acquire an additional 160 acres of property, placing the District and its partners closer to being able to implement the Project by restoring this previously reclaimed land. Due to the configuration of the lands, restoration cannot occur until all lands are acquired, residents relocated and infrastructure floodproofed.

Property is being acquired in conformance with State and Federal law. Properties are appraised and the fair market value is determined, property is purchased for the fair market value and residents and renters are relocated in accordance with Federal Highway Administration (FHWA) regulations. Structures, if any, are demolished and all utilities removed. Conservation easements for the acquired properties are being held by the California Department of Fish and Game, Wildlife Conservation Board.

### **Proposed Work**

This phase of the Project will deliver approximately 160 acres of property within the Project area, in addition to the property acquired with FPCP funds. The attached map shows which parcels have already been acquired, the parcels where owners have indicated they are willing sellers, and parcels which are potential acquisitions for this project. Utilizing existing FPCP funds, the District anticipates acquiring nearly all of the parcels identified as willing sellers.

Implementation of the entire Project is contingent on obtaining all LERRDs and appropriation of Federal funding. Only after all properties are acquired and mitigation has been implemented for roads and electric transmission lines can the levees be

breached and the area inundated and fully restored to its natural and beneficial function. Until fully implemented, lands and infrastructure are vulnerable to flood damage in the event of levee failure. Full Project implementation is several years in the future. Removal of property from private ownership and restoring the natural and beneficial functions will reduce flood risk and future flood damages for when the levee system fails, resulting in prolonged flooding of the “protected” lands.

Property acquisition follows the following procedures:

1. *Identify potential properties for acquisition:* Letters are sent to property owners inquiring on whether they are interested in selling the property. Signed forms with contact information are returned by willing sellers. An acquisition plan is developed based on the available properties from willing sellers. The acquisition plan will be based on the current priorities of purchasing the most flood prone properties first (deepest flooding), then proceeding to areas of lower flood risk. *Deliverable:* Acquisition Plan.
2. *Phase I Environmental Site Assessment (ESA) for the properties:* A qualified consultant will be hired to complete a Phase I ESA. Phase I ESA's for other properties have only found two properties with local contamination issues. *Deliverable:* Phase I ESA
3. *Acquire Property:* Preliminary Title Reports are obtained for properties to be acquired, and are reviewed to determine if unsatisfactory title issues exist. Unsatisfactory title issues are resolved. Appraisals by a licensed general appraiser are obtained for properties to be acquired. If required, appraisals will be reviewed and approved. Offer is made to owner at fair market/appraised value. If accepted, the sales contract is executed and escrow opened. Property is sold. *Deliverable:* Property with clean title.
4. *Property Cleanup:* The District will clean up property (demolish buildings, abandon wells, etc.). If necessary, agricultural vegetation may be removed and replaced with native vegetation.
5. *Conservation Easement:* Place conservation easement on property. Existing conservation easements are held by California Department of Fish and Wildlife/Wildlife Conservation Board. *Deliverable:* Conservation Easements.

### **Grant reporting tasks**

Progress reports will be submitted on a regular and consistent basis to meet the requirements of the Westside RWMG for disbursement of funds. The reports shall be submitted by email and hard copy on a quarterly basis. The progress reports shall provide a brief description of the work performed, project activities, milestones achieved, and other accomplishments or issues during the reporting period.

A final report will be prepared and submitted to the Westside RWMG upon completion of the project. The final report will include: 1) an executive summary; 2) a comparison between the planned completion date in the submittal and the actual timeline and

explanation of the differences; and 3) a discussion of the major problems occurred in meeting the project goals and objectives as proposed and how they were resolved. The final report will also contain a detailed description and analysis of project results including whether the purpose of the project have been met, and a summary of the costs incurred and disposition of funds disbursed. The final report will be submitted electronically and a hard copy will be provided.

Invoices shall contain the date of the invoice, the time period covered by the invoice, the total amount due, and an original signature and date of the project’s authorized representative. Invoices will itemized and based on the categories specified in the budget exhibit. The amount claimed for salaries/wages/consultant fees will include a calculation formula.

All applicable California Labor Code requirements, including prevailing wage provisions will be followed. If applicable, the Project Manager will, or through a third-party, adopt and enforce a Department of Industrial Relations-certified Labor Compliance Program (LCP) meeting the requirements of Labor Code section 1771.5.

**Standards for Implementation**

All construction, health, and safety industry standards will be followed for implementation of the project.

**Performance measures and monitoring plans for the projects listed**

Presented in the table below are the planned monitoring and performance measures that will demonstrate that the Project will meet its intended goals, achieve measureable outcomes and provide value to the State of California.

Monitoring, Assessment, and Performance Measures				
Project Goals	Desired Outcomes	Targets	Performance Indicators	Measurement Tools and Methods
Reduce flood risk and potential damage in the Project area to minimal levels.	Private property damage eliminated	Removal of 18 homes and 1,650 acres of property from behind a substandard levee	Direct measurement of the number of homes and acres of land acquired and protected from future development	Measured with the use of Geographic Information Systems (GIS)
	When floods occur, infrastructure damage is not significant	Elevate roadways above 1% annual chance flood	Project to elevate approximately one quarter mile of Highway 20 and one quarter mile	Project to elevate roadways and Record Drawings completed

			of the Nice-Lucerne Cutoff	
		Reduce flood risk to PG&E transmission line	Floodproof and/or relocate PG&E transmission towers	Project and Record Drawings completed
Improve water quality on Clear Lake	Reduce frequency and magnitude of nuisance, cyanobacteria blooms in Clear Lake	Reduce nutrient inputs to Clear Lake	Reduce Clear Lake average chlorophyll-a concentrations by 26%	Direct measurement of nutrients and chlorophyll-a in the Clear Lake water column
Restore damaged open water and wetlands systems and their associated habitat values in the Project area	Restoring the area to serve as a functional floodplain-wetland-open water complex	Restore 765 acres of wetlands, 230 acres of riparian, 405 acres of open water, and 250 acres of floodplain habitat	Acres of ecological system restored	Measures with the use of Geographic Information Systems (GIS) and aerial photographs

**Status of acquisition of land or rights-of-way as applicable**

It is estimated that property acquisition will be complete within two years of the start of the process. A conservation easement will be placed on the properties to preserve them in perpetuity for the project’s ecosystem restoration and flood damage reduction benefits.

**CEQA status, NEPA, other laws**

The project is exempt from CEQA and a notice was filed in May of 2004. No regulatory permits are required for the property acquisition.

**6. Regional Collaborative Water Use Efficiency Program**

**Work to be performed**

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, detailed below.

- 1) Regional Water Conservation Education. Regional education programs will be developed as a collaborative effort between Westside regions of Napa, Lake and Solano counties and will target both education and curriculum development for K-12 students (Project WET workshops, for example) and water conservation education and increased awareness for the general public including radio, print and other outreach campaigns and workshops conducted throughout the Program area.
- 2) Residential Rebates. Financial incentives in the form of rebates will be offered to residents in Yolo County and the Napa County area of the Westside region for the installation of water conservation fixtures. Devices rebated may include: high-efficiency toilets, high-efficiency washing machines, rain gardens, rain barrels, weather-based or smart irrigation controllers, lawn removal rebates as well as others. Residents of the Lake Berryessa area have never been offered conservation rebates before, so there is great potential to reach unmet needs in this area.
- 3) CII Water Use Efficiency. Water efficient technologies in commercial settings have great water savings potential. This program will provide financial incentives for CII accounts to upgrade their irrigation systems, plumbing fixtures, and/or water-using appliances for the purpose of improving water-use efficiency. Implementation of this project will result in lower water and energy use. By using less water and energy, less power will be needed thereby reducing power plant emissions. Less water and energy used will result in favorable impacts to the region's reliance on traditional water sources.
- 4) Agricultural Water Conservation Incentives. Agricultural incentives include; agricultural water use efficiency education, Mobile Water Lab services to farmers using drip irrigation, water use efficiency improvements and technical assistance. If farmers follow recommended practices after receiving outreach and system evaluations, the anticipated 10-20% water savings will improve stream flow quantity and timing (reduce demand on stream water during frost protection), and conserve pump energy and reduce GHG emissions. Project will result in local water supply reliability because agricultural demand will be decreased.

The Program includes \$232,000 for regional water conservation education, rebates and agricultural water conservation. Rebate funding will fluctuate based on the rebate options chosen. Lessons learned from this program will be applied throughout the Westside Region via educational materials and collaborative engagements, meetings and workshops with participating agencies within Napa, Solano, Yolo and Lake Counties.

Implementation of this project will result in lower water and energy use. By using less water and energy, less power will be needed thereby reducing power plant emissions. Less water and energy used will result in favorable impacts to the region's reliance on traditional water sources.

Program effectiveness will be assessed by 1) logging the number of rebates/fixtures installed, 2) participating agencies will log the number of rebate dollars provided, 3) each site will be reviewed to ensure that it meets program eligibility requirements, 4) pre and post inspections may be required for verification, and quarterly estimates of acre-feet of water saved by the program participants. All participants will be required to meet Water Agency eligibility requirements. Quarterly progress reports will list number of rebates and or fixtures installed, as well as an estimate of water savings.

This project is ready to proceed and is consistent with Federal, state and local conservation plans. The Regional Collaborative Water Use Efficiency Program will result in no possibility of significantly impacting the surrounding environment or of significantly impacting any threatened or endangered species. Conservation projects have been determined to be categorically exempt and a Notice of Exemption is not required. No other permits or approvals are required for this project.

The proposed program will promote water savings that will result in local water supply reliability, improved stream flow quantity and timing (through reduced demand on stream water during frost protection), and conserve pump energy thereby reducing energy demand and to a lesser extent Green House Gas emissions.

- i. Decrease potable water use and increase water supply reliability.
- ii. Increase agricultural water use practices.
- iii. Support the regional goals in the Westside Integrated Regional Water Management Plan.
- iv. Increase access to high-efficiency products for low-income populations through rebates for the purchase and installation of water-efficient fixtures.
- v. Improve consumer acceptance and awareness of water and energy efficient appliances and products.
- vi. Promote the U.S. EPA WaterSense product label.
- vii. Reduce energy use and carbon emissions by reducing pumping and treatment for water and wastewater.
- viii. Provide outreach, education and trainings to convert traditional urban landscaping to water-efficient and sustainable landscaping.

Promote environmental sustainability and improve environmental stewardship by reducing potable water use, carbon emissions from mechanized gardening, and fertilizer, herbicide and pesticide laden water runoff into local streams

Using water efficiently is a foundational action for water management, one that serves to mitigate and adapt to climate change. The Regional Water Conservation Program will reduce water demand, wastewater discharges, as well as energy demand and greenhouse gas emissions. Efficient water use will help communities cope with water shortages that may result from climate change, thus reducing economic and environmental impacts of water shortages.

### **Grant reporting tasks**

Progress reports will be submitted on a regular and consistent basis to meet the requirements of the Westside RWMG for disbursement of funds. The reports shall be submitted by email and hard copy on a quarterly basis. The progress reports shall provide a brief description of the work performed, project activities, milestones achieved, and other accomplishments or issues during the reporting period.

A final report will be prepared and submitted to the Westside RWMG upon completion of the project. The final report will include: 1) an executive summary; 2) a comparison between the planned completion date in the submittal and the actual timeline and explanation of the differences; and 3) a discussion of the major problems occurred in meeting the project goals and objectives as proposed and how they were resolved. The final report will also contain a detailed description and analysis of project results including whether the purpose of the project have been met, and a summary of the costs incurred and disposition of funds disbursed. The final report will be submitted electronically and a hard copy will be provided.

Invoices shall contain the date of the invoice, the time period covered by the invoice, the total amount due, and an original signature and date of the project's authorized representative. Invoices will itemized and based on the categories specified in the budget exhibit. The amount claimed for salaries/wages/consultant fees will include a calculation formula.

All applicable California Labor Code requirements, including prevailing wage provisions will be followed. If applicable, the Project Manager will, or through a third-party, adopt and enforce a Department of Industrial Relations-certified Labor Compliance Program (LCP) meeting the requirements of Labor Code section 1771.5.

### **Standards for Implementation**

All construction, health, and safety industry standards will be followed for implementation of the project.

### **Performance measures and monitoring plans for the projects listed**

Presented in the table below are the planned monitoring and performance measures that will demonstrate that the Project will meet its intended goals, achieve measureable outcomes and provide value to the State of California.

Monitoring, Assessment, and Performance Measures				
Project Goals	Desired Outcomes	Targets	Performance Indicators	Measurement Tools and Methods
Decrease potable water use and increase water supply reliability.	To provide reliable water supplies of suitable quality for multiple beneficial uses within the Region.	900 HETs installed, 400 HEW/turf replacement/rain garden rebates, and 50 rain barrel rebates	Number of high volume toilets replaced with HETs; HEWs installed; sw. ft. of turf removed; rain barrels rebated.	Quarterly reports will be submitted listing the number of HETs, HEWs, rain barrels installed, the amount of turf removed, associated costs of the program, and the calculated water savings.
Increase agricultural water use efficiency practices.	The adoption of agricultural Best Management Practices as they pertain to water use efficiency.	7 site assessments	The number of site inspections and agricultural irrigation audits conducted will be recorded.	Quarterly reports will be submitted listing the number of site inspections and agricultural audits, associated costs of the program and the calculated water savings will also be reported.
Promote reasonable use of water and watershed resources.	Increased public awareness of best management practices for urban and agricultural water supplies.	The regional conservation program will use multiple venues (print, electronic, physical, and verbal) to deliver conservation information to the public in the Region.	The number of site inspections/visits will be tracked; the number of brochures mailed out and materials distributed; the number of PSAs created and the number of workshop attendees.	Quarterly reports will be submitted listing the number of site inspections, brochures and materials distributed, PSAs created and number of workshop attendees. Associated costs of the program and the calculated water savings will also be reported.
Improve education and awareness throughout the Region about	Improved awareness and education about resources and	The regional conservation program will use multiple venues	Number of workshops, brochures mailed out and materials	Quarterly reports will be submitted listing the number of brochures and

water, watershed functions, and ecosystems and the need for sustainable resource management to protect community health and well-being.	water supply through conservation education for both children and adults.	(print, electronic, physical, and verbal) to deliver conservation information to the public in the Region.	distributed.	materials distributed, PSAs created and number of workshops attendees.
Increase access to high-efficiency plumbing fixtures for residents of small communities and one DAC in the Region.	The installation of high-efficiency plumbing fixtures and appliances in small communities around Lake Berryessa.	50 HETs and 50 HEWs installed.	Number of HETs and HEWs installed.	Quarterly reports will be submitted listing the number of HETs and the HEWs installed along with associated costs of the program, and the calculated water savings.

**CEQA status, NEPA, other laws**

This project is exempt from CEQA and no regulatory permits are required. The program is ready to proceed once funded.

**Description of deliverables**

If awarded funds, LPCCC will submit Quarterly Reports, Invoices, and a Final report as prescribed in the contract with the Westside RWMG as described above.

**7. Wastewater Storage Ponds and Disposal Improvements**

**Work to be performed**

In direct response to the California Regional Water Quality Control Board, Central Valley Region (Regional Board), and fines issued to the Lake Berryessa Resort Improvement District (District) for the discharge of treated wastewater to Lake Berryessa, the District is required by the Regional Board to complete these improvements to its wastewater treatment facility. Planned improvements to the District’s wastewater system are described in detail below and all improvements are planned to be completed no later than December 2013:

- Storage Pond Expansion– Currently the total wastewater pond storage capacity is approximately 7.4 million gallons. Pond storage capacity upon completion of the project will be 27.1 million gallons. The planned project consists of

combining two ponds (Ponds 6 and 7) into one larger pond (renamed Pond 7) and constructing two new ponds (Ponds 6 and 8) to attain a total of 27.1 million gallons storage capacity. The remaining storage ponds (Ponds 4 and 5) will remain unchanged.

- Spray Disposal Field Improvements – The existing spray field disposal area is approximately 5.8 acres. The planned project consists of adding 1.0 acre (to Spray Field 2) and creating two additional spray field disposal areas (Spray Fields 3 and 4) for a combined total area of 8.7 acres. The total acreage available for irrigation disposal will then be 15.5 acres. As part of this portion of the project, the spray field lift station capacity will be expanded to handle flows to the new spray disposal areas. A new transfer lift station will be constructed between ponds 4, 5, and new pond 6 to convey wastewater to the new storage ponds. Modifications to the existing PG&E service will also be completed to bring electrical power to the two lift-stations to improve service reliability over the existing diesel powered system while simultaneously reducing long-term maintenance costs.

### **Grant reporting tasks**

Progress reports will be submitted on a regular and consistent basis to meet the requirements of the Westside RWMG for disbursement of funds. The reports shall be submitted by email and hard copy on a quarterly basis. The progress reports shall provide a brief description of the work performed, project activities, milestones achieved, and other accomplishments or issues during the reporting period.

A final report will be prepared and submitted to the Westside RWMG upon completion of the project. The final report will include: 1) an executive summary; 2) a comparison between the planned completion date in the submittal and the actual timeline and explanation of the differences; and 3) a discussion of the major problems occurred in meeting the project goals and objectives as proposed and how they were resolved. The final report will also contain a detailed description and analysis of project results including whether the purpose of the project have been met, and a summary of the costs incurred and disposition of funds disbursed. The final report will be submitted electronically and a hard copy will be provided.

Invoices shall contain the date of the invoice, the time period covered by the invoice, the total amount due, and an original signature and date of the project's authorized representative. Invoices will itemized and based on the categories specified in the budget exhibit. The amount claimed for salaries/wages/consultant fees will include a calculation formula.

All applicable California Labor Code requirements, including prevailing wage provisions will be followed. If applicable, the Project Manager will, or through a third-party, adopt

and enforce a Department of Industrial Relations-certified Labor Compliance Program (LCP) meeting the requirements of Labor Code section 1771.5.

**Standards for Implementation**

All construction, health, and safety industry standards will be followed for implementation of the project.

**Performance measures and monitoring plans for the projects listed**

Presented in the table below are the planned monitoring and performance measures that will demonstrate that the Project will meet its intended goals, achieve measureable outcomes and provide value to the State of California.

Monitoring, Assessment, and Performance Measures					
Project Goals	Desired Outcomes	Targets	Performance Indicators	Measurement Tools and Methods	Monitoring Plans
Meet all wastewater discharge standards.	Compliance with Waste Discharge Requirements (WDRs) regulated by the Central Valley Regional Water Quality Control Board.	No violations of the WDRs.	No Administrative Civil Liability Complaints (fines) issued by the Regional Board.	No Administrative Civil Liability Complaints (fines) issued by the Regional Board.	The District is required by current WDRs to provide monthly, quarterly, and annual reports to the Regional Board. Included within these documents is a statement regarding any unpermitted discharges to a water body or encroachment into the 2-foot freeboard mark in any pond which are both violations.
Minimize accidental wastewater discharges to Lake Berryessa.	Increase Wastewater Treatment, Storage, and Disposal Facilities	Upgrade existing wastewater storage capacity to accommodate the required design volume.	No future discharges to Lake Berryessa.	The Regional Board has issued a schedule to bring the District's	Same as above.

	Capacity to handle subdivision build-out flows and an annual precipitation return period of 100 years.			wastewater facilities into compliance.	
		No wastewater discharges caused by excessive inflow/infiltration entering the collection system.		Additional fines could be issued to the District if the provided schedule is not adhered to.	
Reduce public health risks by eliminating treated wastewater discharges to drinking water sources.	Preserve the water quality of Lake Berryessa by preventing future discharges of treated wastewater to Stone Corral Creek which empties in the Lake.	Same as above.	Reduction of approximately 3.5* million gallons of treated wastewater entering Lake Berryessa annually.	Same as above.	Same as above.

\*Based on the average amount of wastewater discharges that occurred from 2005-2011.

**CEQA status, NEPA, other laws**

The project is at the 60% design stage with final design scheduled to be completed in April of 2013. A Mitigated Negative Declaration has been prepared and is expected to be adopted in April of 2013.

**Description of deliverables**

If awarded funds, LPCCC will submit Quarterly Reports, Invoices, and a Final report as prescribed in the contract with the Westside RWMG as described above.

**8. Water Tank Replacement Project**

**Work to be performed**

The Lake Berryessa Resort Improvement District’s (District) water distribution system currently serves approximately 180-single family residences. The system consists of three pressure zones that are maintained by their own storage tank. The primary zone is maintained by a 200,000 gallon water storage tank (Tank #1) and pump station (PS#1), which lies below the other two zones and currently serves approximately half of the District’s residents. The second pressure zone serves approximately one-third of the

customer base and is maintained by a 100,000 gallon water storage tank (Tank #2) and pump station (PS#2). The third water storage tank (Tank #3) also has an overall maximum capacity of 100,000 gallons; however, due to seismic concerns it is currently operating at approximately half of the maximum capacity. Tank 3 is used to maintain the final pressure zone, which is located at the highest elevation in relation to the other tanks, and serves approximately the remaining one-fifth of the District's residents.

All three existing water storage tanks are constructed of redwood staves with steel tension hoops. Record drawings indicate that all three tanks were constructed in the late 1960s. The existing tanks are at the end of their useful service life and two of them are not structurally stable. The existing pumps, motors, and starters at the two pump stations are consistently in need of repair, which requires the District to rent emergency pumps to transfer water to the different pressure zones.

The proposed project will replace the three (3) existing redwood storage tanks with three (3) bolted steel storage tanks. The overall design capacity for the system, which is 400,000 gallons of storage, will remain unchanged. The project also includes updates to the existing pumping and electrical equipment that serves two pumps stations associated with the tanks and overall water system.

The 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.

### **Grant reporting tasks**

Progress reports will be submitted on a regular and consistent basis to meet the requirements of the Westside RWMG for disbursement of funds. The reports shall be submitted by email and hard copy on a quarterly basis. The progress reports shall provide a brief description of the work performed, project activities, milestones achieved, and other accomplishments or issues during the reporting period.

A final report will be prepared and submitted to the Westside RWMG upon completion of the project. The final report will include: 1) an executive summary; 2) a comparison between the planned completion date in the submittal and the actual timeline and explanation of the differences; and 3) a discussion of the major problems occurred in meeting the project goals and objectives as proposed and how they were resolved. The final report will also contain a detailed description and analysis of project results including whether the purpose of the project have been met, and a summary of the costs incurred and disposition of funds disbursed. The final report will be submitted electronically and a hard copy will be provided.

Invoices shall contain the date of the invoice, the time period covered by the invoice, the total amount due, and an original signature and date of the project’s authorized representative. Invoices will itemized and based on the categories specified in the budget exhibit. The amount claimed for salaries/wages/consultant fees will include a calculation formula.

All applicable California Labor Code requirements, including prevailing wage provisions will be followed. If applicable, the Project Manager will, or through a third-party, adopt and enforce a Department of Industrial Relations-certified Labor Compliance Program (LCP) meeting the requirements of Labor Code section 1771.5.

**Standards for Implementation**

All construction, health, and safety industry standards will be followed for implementation of the project.

**Performance measures and monitoring plans for the projects listed**

Presented in the table below are the planned monitoring and performance measures that will demonstrate that the Project will meet its intended goals, achieve measureable outcomes and provide value to the State of California.

Monitoring, Assessment, and Performance Measures					
Project Goals	Desired Outcomes	Targets	Performance Indicators	Measurement Tools and Methods	Monitoring Plans
Meet all water quality standards.	Compliance with the California Department of Public Health (CDPH) operating permit and all water quality standards.	No violations.	No water quality exceedances.	Daily observation of the water system by the District operators.	The District is required by the current CDPH operating permit to provide monthly, quarterly, and annual reports. Included within these documents is a statement regarding any water quality result exceedance.
Provide reliable water supply of suitable quality	Replace all three water storage tanks and pump	Increase equipment redundancy.	No water shortages caused by weather	SCADA system will alert operators of decreasing	Same as above.

for a DAC.	stations within the subdivision.	Seismic stability in all tanks.  Minimize water leakage from the system.	related issue or equipment failures.	water levels.	
Improve water-related public health for the Region.	Replace all three water storage tanks and pump stations within the subdivision.	Same as above.	No boil water notices.	Comparison of pre- and post-construction water quality data.	Same as above.

**CEQA status, NEPA, other laws**

95% design plans, specifications, and cost estimates have been completed with final design to be completed by October 2013. The Project is Categorical Exempt from CEQA and no regulatory permits are required.

**Description of deliverables**

If awarded funds, LPCCC will submit Quarterly Reports, Invoices, and a Final report as prescribed in the contract with the Westside RWMG as described above.