Project Consistency with Adopted IRWM Plan

The *2013 IRWM Plan* is a "living" document that can add projects to its project list, and subsequently include in them in the Region's funding proposals, via a three-step process: 1) projects are entered into online project database for screening per IRWM Plan Objectives, 2) projects are scored using selection criteria determined by the Regional Advisory Committee (RAC), and 3) a project suite is selected by the Project Selection Workgroup. Each step is described below, along with the final project suite for this Proposal.

Step 1: Online Project Database and Project Screening

Per *Section 9.3 Including Projects in the IRWM Plan* of the *2013 IRWM Plan*, "Projects that meet at least one Plan Objective are eligible for inclusion in the San Diego IRWM Plan as soon as they are entered into the San Diego IRWM Project Database..." Therefore, the first step in adding a project to the current IRWM Plan is to log in to the online project database (the "OPTI" system), and enter the project. One field of the project entry form asks project sponsors to identify which of the eleven objectives of the *2013 IRWM Plan* the project addresses. The form also requires a brief explanation of how the project will meet each of the indicated objectives. Once the response is verified, this requirement is fulfilled and the project is considered part of the IRWM Plan. The San Diego IRWM project list is hosted online at: http://irwm.rmcwater.com/sd/login.php. Excerpts from the list highlighting projects included in this Proposal are included as **Appendix 1-5**. Note that some project names have been modified since they were entered in the database, to fully represent each project's intent.

Projects in the online project database are only eligible for inclusion in regional funding applications if they meet Objective A, Objective B, and at least one other objective of the *2013 IRWM Plan* (see *Section 9.3 Including Projects in the IRWM Plan*). **Objective A** encourages the development of integrated solutions to address water management issues and conflicts. As described in *Section 2.7 IRWM Objectives* of the *2013 IRWM Plan*, there are six types of integration that meet Objective A:

- *Partnership*: Establishing partnerships between different organizations to increase cost-effectiveness through sharing of data, resources, and infrastructure.
- *Resource Management*: Employing multiple resource management strategies within a single project to effectively address a variety of issues.
- *Beneficial Uses*: Developing solutions that address multiple beneficial uses to expand benefits.
- *Geography*: Implementing watershed- or regional-scale projects to benefit a greater amount of people and potentially save costs through economies of scale.
- *Hydrology*: Addressing multiple watershed functions within the hydrologic cycle to holistically address issues and resolve conflicts.
- *Sustainability:* Implement projects that meet the needs of the present without compromising the ability of future generations to meet their own needs and broadly support social, environmental, and economic benefits.

Objective B maximizes stakeholder/community involvement and stewardship of water resources, emphasizing education and outreach. All projects eligible for inclusion in regional funding applications must therefore include some form of active outreach.

Other objectives of the *2013 IRWM Plan* include:

- **Objective C:** Effectively obtain, manage, and assess water resource data and information.
- **Objective D:** Further the scientific and technical foundation of water management.

- **Objective E:** Develop and maintain a diverse mix of water resources, encouraging their efficient use and development of local water supplies.
- **Objective F:** Construct, operate, and maintain a reliable water management infrastructure system.
- **Objective G:** Enhance natural hydrologic processes to reduce the effects of hydromodification and encourage integrated flood management.
- **Objective H:** Effectively reduce sources of pollutants and environmental stressors to protect and enhance human health, safety, and the environment.
- **Objective I:** Protect, restore, and maintain habitat and open space.
- **Objective J:** Optimize water-based recreational opportunities.
- **Objective K:** Effectively address climate change through greenhouse gas reduction, adaptation, or mitigation in water resource management.

A complete description of the Plan objectives can be found in *Chapter 2 Vision and Objectives* of the *2013 IRWM Plan*.

Step 2: Numerical Scoring

Section 9.4 IRWM Project Review of the *2013 IRWM Plan* describes how the Region evaluates and selects projects, and the importance of stakeholder input in this process. Projects entered into the online project database are scored by a third party using the scoring criteria found in Table 9-1 of the *2013 IRWM Plan*. As noted in the plan, the scoring criteria are weighted, and additional scoring criteria may be added, to reflect the priorities of the Region and the specific requirements and preferences of the funding solicitation in question. The scoring criteria were modified and approved by the RAC through an open and transparent process at a meeting on April 1, 2015. At this meeting, the RAC also nominated a Project Selection Workgroup to evaluate the projects, and authorized it to select a suite of projects on behalf of the Region to include in this application.

Step 3: Project Selection Workgroup

The Project Selection Workgroup members followed the Project Selection Process in the *2013 IRWM Plan*, which directed them to consider Tier 1 Projects (those that received the highest scores under Step 2) in more depth. To guide this discussion, the Project Selection Workgroup used the *Framework for Scoring Guidelines for IRWM Grant Opportunities* (Table 9-2 of the *2013 IRWM Plan*), which were also modified and approved by the RAC at the meeting on April 1, 2015. The Project Selection Workgroup met six times for a total of 37 hours. Two of those meetings were Project Interviews where project sponsors were invited to interview with the Project Selection Workgroup to present additional information about their projects and answer questions from the Workgroup. Each project included within this Proposal was prioritized and recommended by the Project Selection Workgroup, with the final recommendation validated by the RAC on June 3, 2015 and approved by the SDCWA Board of Directors on June 25, 2015.

Proposed Project Suite

Table 1-1 shows which of the objectives of the *2013 IRWM Plan* described above are met by each of the projects included in this Proposal. The following sections provide a brief overview of each project included within this application.

Table 1-1: Consistency of Proposed Projects with IRWM Plan Objectives

Proposal Projects		IRWM Plan Objectives Addressed										
		A	B	C	D	E	F	G	H	I	J	K
Conservation Program												
1	Regional Drought Resiliency Program	●	●	●		●			●			●
2	Conservation Home Makeover in the Chollas Creek Watershed	●	●	●		●		○	●			●
3	San Diego Water Conservation Program	●	●			●			●			●
4	Ms. Smarty-Plants Grows Water-Wise Schools	●	●	●		●			○			●
Rural Water Infrastructure Program												
5	Rural Disadvantaged Community Partnerships – Phase III	●	●	○	○	●	●	●	●	●	●	●
Water Reuse Program												
6	Integrated Water Resource Solutions in the Carlsbad Watershed	●	●	●		●	●	●	●	●	○	●
7	UCSD Water Conservation and Watershed Protection	●	●	●	●	●	●	●	●	○		●
8	Escondido Advanced Water Treatment for Agriculture	●	●	●		●	●		●		○	●
9	Padre Dam Advanced Water Treatment – Phase IA Expansion	●	●	●	●	●	●		○	○	○	●
10	Safari Park Drought Response and Outreach	●	●			●	●		○	○		●
Water Quality and Habitat Program												
11	San Diego River Healthy Headwaters Restoration	●	●	○		○		●	●	●		●
12	Sweetwater Reservoir Wetlands Habitat Recovery	●	●	●	●	○		●	●	●	○	●
13	Hodges Reservoir Natural Treatment System	●	●			○	●		●	●	○	○

● = directly addresses; ○ = indirectly addresses

The Project Selection Workgroup used the *2013 IRWM Plan* as its guidebook in evaluating and selecting projects for this *2015 IRWM Implementation Grant Proposal*. All projects included in this funding package are consistent with, and help to implement, multiple objectives in the *2013 IRWM Plan*, as shown in **Table 1-1**. The thirteen projects included in this package can be grouped into four programs: 1) Conservation Program, 2) Rural Water Infrastructure Program, 3) Water Reuse Program, and 4) Water Quality and Habitat Program. These four programs each address important geographies and needs of the San Diego IRWM Region, and the projects included herein encompass the goals, objectives, and values of the Region. Many of these projects build upon the experiences of past IRWM-funded projects, and continue successful work by expanding existing programs and implementing projects recommended by, or developed as a result of, past IRWM-funded studies. As encouraged by the *2013 IRWM Plan*, and as directed by the RAC, the Region sought to select projects that would span the region and population, address a wide range of *2013 IRWM Plan* objectives, and provide benefits beyond water supply and water quality, while considering the importance of projects that provide drought resiliency. In addition, the Project Selection Workgroup considered how projects paved the way for future priority projects in the Region, including potable reuse opportunities, and those projects whose results could be used to successfully expand or create similar programs in the future. By program, the proposed funding package includes:

Conservation Program

The Conservation Program addresses seven *2013 IRWM Plan* objectives, and supports the Region's water supply reliability goals. The target audience for the Conservation Program's projects ranges from DACs to schools to all members of the public. Outreach approaches include mass outreach through the two regional projects (*1: Regional Drought Resiliency Program* and *3: San Diego Water Conservation Program*), and targeted outreach to schools (*4: Ms. Smarty-Plants Grows Water-Wise Schools*) and DACs (*2: Conservation Home Makeover in the Chollas Creek Watershed*). The two regional projects expand and build upon previous IRWM-funded projects, leveraging the success of those projects to reach additional stakeholders and achieve greater conservation savings. With the groundwork for these programs in place through the previous iterations of these programs, they are able to expand the conservation programs to include pilot greywater rebates, and to utilize lessons learned to improve program efficiency and effectiveness. *4: Ms. Smarty-Plants Grows Water-Wise Schools* builds upon The

Garden's history of successful school outreach to go beyond education and implement on-the-ground water savings at schools, while engaging students and families and providing conservation skills that can also be put to use in their homes. *2: Conservation Home Makeover in Chollas Creek Watershed* is a unique project that utilizes water conservation techniques to meet basic needs of DACs and improve quality of life. This project's success, and the lessons learned, will be used to expand these "home makeovers" to other residents in DACs, and will act as a pilot project for similar efforts.

Project 1: Regional Drought Resiliency Program

SDCWA will implement its *Regional Drought Resiliency Program* in partnership with the California Department of Corrections and Rehabilitation and Otay Water District. There are six components to the program, which primarily build on successful water conservation efforts that have been implemented in the past, including some that received IRWM funding in previous grant cycles. Program components include: 1) Correctional Facility Retrofit Project; 2) Electrical Conductivity Mapping and Soil Moisture Sensor Systems Project; 3) WaterSmart Field Services Program; 4) Sustainable Landscapes Program; 5) WaterSmart Landscape Makeover Program; and 6) Drought Outreach and Education activities. This program will continue the efforts to retrofit correctional facilities with controlled flushing mechanisms and water-saving hardware, conserving water and reducing potential inmate conflicts within the facility, continue the popular turf replacement rebate program to convert landscapes to water-wise landscaping, and provide continued outreach to property owners on reducing water demands while maintaining attractive landscaping. Outreach and education efforts included in this project will expand the learning modules available for successful conversions to water-wise landscaping, and will expand target audiences and demographics media for water-efficiency outreach, and offering school programs to foster conservation values in youth.

This project directly addresses six of the *2013 IRWM Plan* objectives, and supports the Region's goals of water supply reliability and sustainability, water quality protection, and sustainable integrated water resources management. As a regional project, it provides benefits throughout the Region, including DACs.

Project 2: Conservation Home Makeover in the Chollas Creek Watershed

Groundwork San Diego has partnered with the U.S. Green Building Council-San Diego, San Diego Sustainable Living Institute, San Diego Unified School District, and Encanto Neighborhoods Community Planning Group to implement the *Conservation Home Makeover in the Chollas Creek Watershed* project. This project will engage low income youth and their families within the Encanto neighborhood of southeastern San Diego to mitigate drought impacts through water capture and greywater reuse for food production and landscaping. Along with its partners, Groundwork San Diego will install stormwater capture and greywater systems in 50 low-income homes, which will be used to irrigate fruit trees planted on these properties. Benefits from the project will be reducing potable water demands, reducing costs for low-income residents, education and outreach to build technical capacity for low water systems, improved food security, stormwater capture, addressing climate change impacts, and reducing economic and health risks to DACs associated with drought and climate change. To further increase the education component, Groundwork San Diego will use analytical models to produce reports enabling users to visualize future carbon, water, energy, and fire impacts of landscape makeovers at the residential parcel scale. The results of this project will form the basis for a future scale up of the project across the more than 12,000 dwellings in the Encanto neighborhood of southeastern San Diego.

This project addresses DAC needs for water conservation, water supply, and food security. It directly addresses six of the *2013 IRWM Plan* objectives, and indirectly addresses one. The project supports the Region's goals of water supply sustainability, protection of natural resources, and promotion of sustainable integrated water resources management, while also helping the Region to address urban DAC needs.

Project 3: San Diego Water Conservation Program

The City of San Diego's *San Diego Water Conservation Program* will achieve water conservation by expanding the City's successful turf replacement rebate and implementing a pilot program for greywater system rebates. An estimated 440,000 square feet of turf will be replaced through this rebate program, to provide an anticipated 45.9 acre-feet per year (AFY) water savings. Approximately 1,000 greywater system rebates will be provided, reusing a further 28.9 AFY. The project will fund an irrigation efficiency exhibit at The Water Conservation Garden (The Garden). Greywater system installation training and relevant training in outdoor conservation will be provided by the San Diego Sustainable Living Institute (SDSLI), helping to build technical capacity in the Region.

This project will directly address five of the *2013 IRWM Plan* objectives, and support the Region's goals of water supply reliability and sustainable integrated water resources management. In addition, as a project that covers a large area within the region, including heavily urbanized areas, this project provides opportunities for DAC participation, helping to address urban DAC issues of water supply costs.

Project 4: Ms. Smarty-Plant Grows Water-Wise Schools

The *Ms. Smarty-Plants™ Grows Water-Wise Schools* project, implemented by The Water Conservation Garden (The Garden), will target K-12 schools in the Otay and Helix Water Districts with a special emphasis on Title I schools and DACs in Spring Valley and Lemon Grove. Title I schools are those schools serving high numbers or high percentages of children from low-income families. The U.S. Department of Education allows schools with at least 40% of their student population from low-income families to apply for Title I funding assistance for the entire school. The project will deliver the *Ms. Smarty-Plants Grows Earth Heroes* education program to 10,000-20,000 students at K-12 schools. The Garden will also identify and recruit twelve to fifteen K-12 schools to participate in its Water-Wise Schools effort, which will help convert school landscaping to water-wise plants, remove turf, upgrade irrigation systems, and adopt water-wise practices for school operations. Each school that participates in the conversion to water-wise landscaping and practices is expected to save approximately three AFY, with approximately 2.1 AFY savings per school from landscape makeovers alone. This project will also expand the classroom at The Garden to accommodate more students and provide additional workshops and classes. Project partners include Helix Water District, Otay Water District, and La Mesa-Spring Valley and Lemon Grove schools.

This project addresses DACs by targeting Title I schools and helps to build technical capacity by engaging students and their families to implement the turf conversion and water conservation elements at each school. It supports the Region's goals of water supply reliability and sustainability, protection of water quality, and sustainable integrated water resources management. This project directly addresses five of the *2013 IRWM Plan* objectives, and indirectly addresses one.

Rural Water Infrastructure Program

The Rural Water Infrastructure Program comprises one multi-component project: *5: Rural Disadvantaged Community Partnership Project – Phase III*. This project builds upon the success of the previous two phases, funded through Prop 84-Round 1 and Prop 84-Round 2 IRWM grants. The previous phases implemented projects in rural DACs, and developed a process for evaluating and selecting projects that meet DAC needs while also supporting the goals of the IRWM Program. The San Diego IRWM Region seeks to address the water-related needs of its rural stakeholders, which are generally located beyond the boundaries of local water and wastewater agencies. Because of this, it can be challenging to address their needs through traditional means. RCAC has successfully implemented rural DAC projects through the IRWM Program in the past, and has proven a valuable partner in getting IRWM funds to small rural communities that are in need of infrastructure improvements for human health and safety. The Region has also faced challenges to engaging the 18 tribal communities in San Diego County, despite making increased engagement with and participation by tribes a priority for the Region. The RCAC project has been prioritized by the Region as one way to assist tribes in implementing IRWM-funded projects.

Project 5: Rural Disadvantaged Community Partnership Project – Phase III

RCAC's *Rural Disadvantaged Community Partnership Project – Phase III* is the third phase of its partnership program. Through its established project selection process, RCAC has vetted projects to be implemented in conjunction with its rural community partners that will improve water and wastewater infrastructure and address water quality concerns in underserved rural communities and DACs. This project will provide funding for ten sub-projects that will improve water infrastructure or environmental areas in rural DACs. These sub-projects include potable water storage tanks, reclaimed water infrastructure, water meter installation, regionalization/consolidation of neighboring water systems, iron and manganese treatment system installation, floating trash removal, and bioswale construction. Projects will be implemented in the following DACs: Campo Kumeyaay Nation; La Jolla Band of Luiseno Indians; Nestor Community of San Diego; Pauma Band of Luiseno Indians; Richardson Beardsley Park; San Pasqual Band of Mission Indians; Tijuana River Valley Community of San Diego County; and Willowside Terrace Water Association. RCAC has partnered with Alter Terra, Indian Health Services, Bureau of Indian Affairs, SDCWA, City of San Diego, State Water Resources Control Board (SWRCB), Tijuana River Valley Community of San Diego County, and Willowside Terrace Water Association to assist with project implementation.

This project will directly address nine of the *2013 IRWM Plan* objectives, and indirectly address the remaining two. It helps to address the Human Right to Water by implementing water infrastructure improvements that improve drinking water supply reliability and quality. Without this project, the targeted DACs would face potential water shortages in the face of drought and wildfire threats, and continue to drink from contaminated supplies.

Water Reuse Program

The Water Reuse Program includes projects that reuse water efficiently to serve various types of water demands in the Region. This program also helps to support, promote, and lay the groundwork for potable reuse, which is a critical piece of the Region's future water portfolio. Some of these projects, including *6: Integrated Water Resource Solutions for the Carlsbad Watershed, 8: Escondido Advanced Water Treatment for Agriculture*, and *9: Padre Dam Advanced Water Treatment – Phase IA Expansion*, build on previously implemented IRWM-funded projects. *9: Padre Dam Advanced Water Treatment – Phase IA Expansion* takes the first step towards implementing potable reuse within eastern San Diego County, utilizing the lessons learned from Padre Dam MWD's advanced water treatment pilot project funded by a Prop 50 IRWM grant. Similarly, the City of Escondido's project will both set the stage for future potable reuse and expand on previously-funded recycled water system components in a Prop 84-Round 2 IRWM grant. The City of Escondido's project, along with San Elijo JPA's *6: Integrated Water Resource Solutions in the Carlsbad Watershed* project, support and complement the North San Diego Water Reuse Coalition's efforts to integrate wastewater and recycled water between ten water and wastewater agencies in northern San Diego County.

The projects in the Water Reuse Program address different target audiences, and together target a broad range of stakeholders and the public to provide education and outreach about water reuse, the value to the Region, and importance of conserving and protecting the Region's water resources. *7: UCSD Water Conservation and Watershed Protection* targets students and residents of DACs in distinct communities in the Region. Similarly, *10: Safari Park Drought Response and Outreach Program* targets students through its school education efforts, but also expands outreach to target all residents in the Region, along with the thousands of people who visit the Safari Park each year – educating those less familiar with the Region about the reality and use of water resources in San Diego County. Both *6: Integrated Water Resource Solutions in the Carlsbad Watershed* and *9: Padre Dam Advanced Water Treatment – Phase I Expansion* target residential customers, with the latter targeting inland residents, and the former targeting coastal residents and community centers. Finally, *8: Escondido Advanced Water Treatment for Agriculture* targets agricultural customers, with an emphasis on avocado growers whose crops are salt-sensitive.

As shown in **Table 1-1**, the Water Reuse program directly addresses ten of the eleven *2013 IRWM Plan* objectives, and indirectly addresses the eleventh. These projects will reduce potable water demands, reduce local demand for imported water, and increase local, drought-proof supplies. Together, they will improve local water supply reliability through an integrated approach providing multiple benefits.

Project 6: Integrated Water Resource Solutions for the Carlsbad Watershed

San Elijo JPA's *Integrated Water Resource Solutions for the Carlsbad Watershed* project utilizes recycled water and low-impact development (LID) strategies to reduce discharge to the Escondido Land Outfall and reduce urban runoff, as well as implements water quality monitoring at San Elijo Lagoon. Project components include construction of an additional 750,000 gallons of recycled water storage at the San Elijo Water Recycling Facility (SEWRF), installation of pipelines and appurtenances to increase influent delivery to SEWRF, construction of three miles of pipeline to distribute additional recycled water to the Cities of Encinitas and Solana Beach, and installation of LID streetscape improvements along Highway 101. These improvements are anticipated to provide water quality benefits to San Elijo Lagoon and Cottonwood Creek/Moonlight Beach, which will be monitored for water quality purposes. In addition, San Elijo JPA and its partners (City of Encinitas, City of Solana Beach, San Dieguito Water District, Santa Fe Irrigation District, Olivenhain Municipal Water District, and San Elijo Lagoon Conservancy) will conduct community outreach targeting DACs.

This project directly addresses nine of the *2013 IRWM Plan* objectives, and indirectly addresses one. It supports the Region's supply reliability and sustainability goals and protects water quality and natural resources.

Project 7: UCSD Water Conservation and Watershed Protection

UCSD will improve water conservation and watershed protection with its *UCSD Water Conservation and Watershed Protection* project. This project will be implemented in partnership with San Diego Coastkeeper, Urban Corps of San Diego, WILDCOAST, and community-based organizations. Components of the water conservation portion of this project include: 1) expanded recycled water use at the Central Utilities Plant cooling tower at UCSD; 2) retrofitting HVAC systems to allow reuse of condensation water for irrigation; 3) turf replacement; and 4) water conservation community outreach and education. These conservation and reuse efforts are anticipated to conserve 203 AFY potable water. The watershed protection program includes: 1) restoration of the Tijuana River Valley through trash and invasive species removal, 2) turf replacement with stormwater treatment landscaping, and 3) a Modular Wetland Stormwater Treatment System at UCSD to treat and monitor stormwater runoff. This project will reduce non-point source pollution, engage disadvantaged and underserved communities and youth in restoration work, and directly reduce pollutants discharged to San Diego Bay, the Peñasquitos Watershed, and the La Jolla Shores Area of Special Biological Significance (ASBS).

This project directly addresses nine *2013 IRWM Plan* objectives and indirectly addresses one. It supports the *2013 IRWM Plan*'s water supply reliability and sustainability goals, provides for watershed and natural resources protection, and improves water quality in the Region.

Project 8: Escondido Advanced Water Treatment for Agriculture

The City of Escondido's *Escondido Advanced Water Treatment for Agriculture* project will construct a new membrane filtration reverse osmosis (MFRO) advanced treatment facility with a total production capacity of 2.0 million gallons per day (mgd). Water treated at the MFRO Facility will be blended with tertiary treated water, and distributed to agricultural customers in the northern and eastern areas of the City of Escondido. Project components include construction of several buildings, storage tanks, and pump station at the MFRO Facility. The MFRO Facility will produce 2,240 AFY of desalted recycled water, to be blended with tertiary-treated water from Hale Avenue Resource Recovery Facility (HARRF), to meet a total reduced-salt agricultural demands of 4,440 AFY. This blended product water will offset 888 AFY of additional recycled water that is needed for soil flushing to remove excess salts accumulated in soils from application of unblended recycled water. The City of Escondido has partnered with Escondido Growers for Agricultural Preservation, Vista Irrigation District, City of San Diego, and Rincon Del Diablo Municipal Water District to implement this project.

This project directly addresses seven of the *2013 IRWM Plan* objectives, and indirectly addresses one. It supports the Region's goals of supply reliability and sustainability, and protects water quality while supporting local agriculture and the economy.

Project 9: Padre Dam Advanced Water Treatment – Phase IA Expansion

Padre Dam MWD's *Padre Dam Advanced Water Treatment – Phase IA Expansion* project is a key component of the East County Regional Water Reuse Program, a water reuse partnership with Helix Water District, County of San Diego, and City of El Cajon. The proposed project will expand the Ray Stoyer Water Reclamation Facility (WRF) from 2 mgd to 6 mgd to deliver an additional 1,008 AFY (0.9 mgd) of recycled water for irrigation, and to deliver tertiary effluent to the planned Advanced Water Purification Facility (AWPF), which is anticipated to produce 2,464 AFY (2.2 mgd) of advanced treated water in the future for potable reuse. This project will also complete three-dimensional hydrodynamic modeling of Lake Jennings to assess the potential for potable reuse at the reservoir, which could expand the potential potable reuse opportunities for the East County Regional Water Reuse Program. Project work for the WRF expansion includes increasing the influent pump station capacity by 4 mgd, a new headworks and grit facility, construction of a flow equalization basin, new primary and secondary clarifier tanks, modification of the biological basins, and additional filters. In partnership with Helix Water District, the modeling will be conducted at Lake Jennings Reservoir.

This project directly supports seven *2013 IRWM Plan* objectives, and indirectly addresses three. In addition it helps to move Padre Dam MWD and Helix Water District towards potable reuse, supporting the Region's goal of supply reliability and sustainability.

Project 10: Safari Park Drought Response and Outreach

The Zoological Society's *Safari Park Drought Response and Outreach* project will achieve 72 AFY potable water savings through increased conservation and recycled water use. Conservation will be achieved through reduced

landscape irrigation by replacing turf with water-wise (xerophytic) landscaping, while the Zoological Society's existing wastewater treatment plant will be upgraded from secondary to tertiary treatment, expanding the potential recycled water uses. To utilize this new recycled water supply, the Zoological Society will construct a recycled water conveyance system and recycled water storage to use the recycled water for maintenance of landscaping and animal exhibits at the Safari Park. The Zoological Society will also expand its water conservation outreach education, available at the Safari Park and online. Approximately 1.4 million people visit the Safari Park each year and 23 million visit the website annually, all of whom would have access to the Zoological Society's water conservation outreach, whose messaging is produced in partnership with SDCWA. The Zoological Society will also expand its existing water conservation education program at the Safari Park, which provides water conservation education and outreach to hundreds of school groups in both the City and County of San Diego, and enhances education programs for stakeholders including DACs, water agencies, community groups, and NGOs throughout California.

This project directly supports five *2013 IRWM Plan* objectives, and indirectly supports another two. It promotes the Region's goals of improving supply reliability and sustainability, and protects water quality, watershed, and natural resources.

Water Quality and Habitat Program

The Water Quality and Habitat Program includes three projects that together address all eleven of the 2013 IRWM Plan objectives. This program helps to address the Region's goals of protection of watersheds and natural resources, enhancing water quality, and sustainable integrated water resource management. Projects included in this program are located in three distinct areas of the Region (see **Figure 2-1** in *Attachment 2 Project Justification*) – Hodges Reservoir in the middle of the Region, the upper San Diego River in the eastern rural area, and the Sweetwater Reservoir in the southern portion of the Region. Each of these projects ultimately support improved water supply and water quality in reservoirs – Hodges, El Capitan, and Sweetwater Reservoirs – while providing habitat benefits to support wildlife. In the case of *13: Hodges Reservoir Natural Treatment System*, the constructed wetland will also provide direct water quality benefits. These projects help to support human needs for water, and reduce conflicts between water resources management and native species management. San Diego County has a high level of biodiversity, with more threatened and endangered species than any comparable land area in the country. Supporting these species while meeting the water-related needs of the more than 3.1 million people in the Region presents challenges, which this Water Quality and Habitat Program helps to address.

Project 11: San Diego River Healthy Headwaters Restoration

USFS's *San Diego Healthy Headwaters Restoration* project implements a watershed-wide, cooperative approach to invasive species removal (feral pigs, invasive weeds and invasive aquatics), and restoration of impacted sites through decommissioning of unauthorized trails and campgrounds, installation of drainage improvements, and site rehabilitation in the San Diego River watershed. Altogether, the project components will improve 335 acres of habitat in the project area. USFS will treat over 50 linear miles of riparian area (stream corridor) for invasive species removal and restoration, protecting approximately 300 acres of surrounding riparian habitat. USFS will also treat an additional 14 acres of known tamarisk population. The City of San Diego will treat 2.5 acres of a known *Arundo donax* population at the El Capitan Reservoir, and will strategically treat an additional 11.4 acres of invasive weeds. The Back Country Land Trust will treat weeds and restore 7 acres of private and Tribal land within the Alpine area. The Feral Pig Working Group will oversee treatment of habitat destruction from feral pig populations (whose activities threaten water quality), as well as invasive aquatic species removal, such as removal of bullfrogs. The project would also restore unauthorized routes, hiking trails, and recreation sites that currently contribute to sediment runoff and water quality impacts. These restoration efforts will help improve hydrologic services that are currently negatively impacted by unauthorized recreation in the project area. Outreach efforts for this project will be headed by San Diego River Park Foundation, and USFS will upgrade information kiosks at four sites to include information on water-wise gardening, native plants, and ways to minimize watershed impacts. Additional partners include San Diego River Conservancy and U.S. Department of Interior.

This project directly addresses six of the *2013 IRWM Plan* objectives, and indirectly addresses two. Through habitat restoration and species removal, this project supports the Region's goals of protecting water quality, enhancing watersheds and natural resources, improving the reliability of regional water supplies, and supporting sustainable integrated water resource management. It also addresses key concerns in the San Diego River Watershed, including TDS, invasive species, and wildfire threats.

Project 12: Sweetwater Reservoir Wetlands Habitat Recovery

SWA's *Sweetwater Reservoir Wetlands Habitat Recovery* project will implement the construction phase of the Habitat Recovery Project (HRP) in response to the 2007 Harris Fire which burned 90 acres near the Sweetwater Reservoir, a key storage site for SWA's water supplies. The HRP has been designed to achieve and contribute to objectives related to floodplain and habitat functionality, constructability, and regional habitat values and water benefits. The project entails major site grading, temporary irrigation, and planting. A multi-channel design and bridge installation will spread river flow more evenly and improve habitat quality in areas lacking sufficient hydrology. Within the 112.7-acre project area, the HRP will restore and enhance approximately 112.5 acres of riparian and 0.2 acre of transitional habitats and result in a net increase of 74.6 acres of endangered Least Bell's Vireo (*Vireo bellii pusillus*) habitat, ultimately providing 212.6 acres of habitat. The *Sweetwater Reservoir Wetlands Habitat Recovery* project will also act as an expansion to an existing preserve located adjacent to the project area, leveraging the habitat benefits provided by both. This effort will reestablish the river-floodplain connection and permit normal Sweetwater Reservoir storage operations to allow the reservoir to store an additional 7,873 AF water when available and maximize wetland functions to provide water quality benefits to the reservoir. Project partners include SDCWA, California Conservation Corps, and Urban Corps of San Diego County.

This project directly addresses eight of the *2013 IRWM Plan* objectives, and indirectly addresses two. It supports the Region's goals of supply reliability, protection of natural resources, and sustainable integrated water resource management. This project will successfully allow for the restoration of habitat and riparian function in the Sweetwater River at the reservoir, supporting endangered species habitat (Least Bell's Vireo) and habitat for other native species, while allowing for optimum operation of the Sweetwater Reservoir to support water storage needs.

Project 13: Hodges Reservoir Natural Treatment System

The City of San Diego's *Hodges Reservoir Natural Treatment System (NTS)* project will create a biofiltration wetland at the Hodges Reservoir to treat seasonally degraded water quality in the reservoir. This project combines recommendations from two previously-funded IRWM studies which identified opportunities for reducing nutrient loading and cycling the reservoir. This project also complements the Regional Emergency Storage and Conveyance Intertie Optimization project funded by a Prop 84-Drought Round IRWM grant. Both of these projects will address the water quality issues facing Hodges Reservoir that prevent full implementation of the Pumped Storage Project at Hodges Reservoir, which is a major element of SDCWA's Emergency Storage Project. Water quality issues in the past have prevented full use of the connectivity between the City of San Diego's Hodges Reservoir and SDCWA's Olivenhain Reservoir, and improving water quality in the reservoir will allow this water to freely move between regional components without damaging existing treatment infrastructure. The wetland will provide habitat, and as water quality in the reservoir improves, additional recreational opportunities are likely to become available. Project partners include the Santa Fe Irrigation District, San Dieguito Water District, San Dieguito Valley Conservancy, and SDCWA.

This project directly addresses five of the *2013 IRWM Plan* objectives, and indirectly addresses three. It supports the Region's goals of water supply reliability, improved water quality, and sustainable integrated water resources management. This project builds on, and complements, previous IRWM-funded projects, and utilizes natural watershed processes to achieve reservoir management goals.

Appendix 1-5 Consolidated Project List

7/25/2015 Projects

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Home Map List Partners Reports Users New Share

My Projects Shared Projects Other Projects

Project Title	Project Organization
2014 San Diego Regional Drought Response Program	SDCWA
2015 Regional Drought Response Program	San Diego County Water Authority
22nd District Agricultural Association/San Dieguito Creek Sewer Force Main Replacement Project	22nd District Agricultural Association
51st St. Headwater Canyon Restoration Project	Groundwork San Diego-Chollas Creek
Acquiring Willow Glen Farm	Back Country Land Trust of San Diego County
Chollas Creek Water Quality, Habitat, and Education Improvement Project	Groundwork San Diego-Chollas Creek
Cielo Azul property acquisition	The Escondido Creek Conservancy
City of Escondido's MFRO Facility for Agriculture	City of Escondido
City of Oceanside Customer Driven Demand Management Automated Metering Infrastructure	City of Oceanside
City of Oceanside Recycled Water Plant and Distribution Expansion Project	City of Oceanside
City of San Diego - Mt. Abernathy Green Street Project	City of San Diego - Storm Water
City of San Diego AMI Expansion and Water Conservation Enhancement Partnership Project	City of San Diego
City of San Diego Parklands Recycled Water Retrofit Program and Distribution System	City of San Diego
City of San Diego Potable Water Use Reduction & Drought Relief Project	City of San Diego Public Utilities Department
City of San Diego Reservoir Sediment Removal and Storage Recovery Project	City of San Diego Water Department
Conservation 101	San Elijo Joint Powers Authority
Conservation in the Campo Valley	Back Country Land Trust of San Diego County
Conservation on Demand: Advanced Metering Infrastructure-Facilitated Conservation	Rincon del Diablo Municipal Water District
Conserving Water, Creating Energy in the Chollas Creek Watershed	Groundwork San Diego
Cooperative Conservation: Integrating Smart Water Management	Olivenhain Municipal Water District
County of San Diego Chollas Creek Runoff Reduction and Groundwater Recharge Project	Department of General Services, County of San Diego
Habitat Enhancement & Invasive Species Control Program for the Elfin Forest Recreational Reserve	Olivenhain Municipal Water District
Harmony Grove Water Factory	Rincon del Diablo Municipal Water Dist
Hodges Reservoir Natural Treatment System	City of San Diego Public Utilities Department
Hodges Reservoir Oxygenation System (HOS) Project	City of San Diego Public Utilities Department (City)
Hodges Reservoir Water Quality Improvements Implementation Projects	City of San Diego Water Department
Hodges Reservoir Water Quality Improvements Plan	City of San Diego Water Department
Implementation of Agricultural Efficiency Programs	San Diego County Water Authority
Mission Valley Brackish Groundwater Desalination Pilot Project	City of San Diego/Water Department
Mountain Empire Watershed Preservation Program ? ?Pollution Prevention Education?	The Southern California Center for Youth, Nature and the Arts, Inc
Ms. Smarty-Plants Grows Waterwise Schools	The Water Conservation Garden
Naturalize Telegraph Canyon Creek Channel in the City of Chula Vista at San Diego Bay	City of Chula Vista

Appendix 1-5 Consolidated Project List

Padre Dam Recycled Water Demand Optimization Project	Padre Dam Municipal Water District
Padre Dam Santee Basin Groundwater Injection and Extraction for Indirect Potable Reuse	Padre Dam Municipal Water District
Padre Dam Water Recycling Facility, Phase 1 Expansion	Padre Dam Municipal Water District (PDMWD)
Paradise Mountain Groundwater Development	Valley Center MWD
Phase 1 - Upper San Marcos Creek Nutrient and Water Quality Abatement/Urban Stream Restoration- San Marcos Creek	City of San Marcos
Phase I -- Chollas Creek Integration Project, Part B	Jacobs Center for Neighborhood Innovatio
Rose Creek Watershed Invasives Control Program: Implementation Phase 2	The Chaparral Lands Conservancy
Rural DAC Drought Partnership Project	RCAC
Rural Disadvantaged Community (DAC) Partnership Project - Phase III	Rural Community Assistance Corporation (RCAC)
Rural Disadvantaged Community (DAC) Partnership Project-Phase II	Rural Community Assistance Corporation (RCAC)
Rural Disadvantaged Community (DAC) Partnership Project	Rural Community Assistance Corp (RCAC)
Ruxton Earthen Channel Improvements	County of San Diego
SFID EASTERN SERVICE AREA RECYCLED WATER PROJECT	Santa Fe Irrigation District
SFID Western Service Area Recycled Water Distribution System Expansion	Santa Fe Irrigation District
Safari Park Drought Response and Outreach Project	Zoological Society of San Diego
Safari Park Storm Water Runoff Management Project	Zoological Society of San Diego
Safari Park Water Conservation Project	Zoological Society of San Diego
San Diego National Wildlife Refuge - Otay Unit Land & Crestridge Linkage Acquisition	The Nature Conservancy
San Diego North Regional Recycled Water Project	Olivenhain Municipal Water District
San Diego Region Four Reservoir Intertie Project Feasibility Study	Sweetwater Authority
San Diego River Healthy Headwaters Restoration Project	USDA Forest Service
San Diego River Watershed Coordinator	The San Diego River Park Foundation
San Diego RiverNet	San Diego State University
San Diego Water Department Cornerstone Lands Management and Source Water Protection	City of San Diego Water Department
Sustaining Healthy Tributaries to the Upper San Diego River and Protecting Local Water Supplies	The San Diego River Park Foundation
Sweetwater Reservoir Wetlands Habitat Recovery Project (HRP)	Sweetwater Authority
Tavern Road Drainage Improvements	County of San Diego
The City of San Diego Recycled Water Infill Projects	City of San Diego
The San Marcos Creek Floodway Improvement Project	Cityof San Marcos
The Sweetwater River Watershed Management Plan	County of San Diego
The Water Conservation Garden Authority Multipurpose Building	The Water Conservation Garden
Tijuana River Valley Invasive Plant Control Program - Phase 4	Southwest Wetlands Interpretive Association
Tijuana River Valley Recovery Strategy Implementation Project	Earth Island Institute
Tijuana River Valley Sediment Management Plan	City of San Diego - Storm Water
Tijuana River Valley Wetlands Restoration Project	San Diego County Water Authority
Tijuana River Watershed Invasive Species Removal	County of San Diego
Turf Replacement and Agricultural Irrigation Efficiency Program	San Diego County Water Authority
UC San Diego Drought Response Project	Facilities, Design and Construction University of California, San Diego
UC San Diego Water Conservation Program - Water Fixture Replacements/Retrofits	University of California, San Diego
UC San Diego Water Conservation and Watershed Protection Project	UC San Diego, EH&S Environmental Affairs
Undergrounding Water Supply Through the Sweetwater National Wildlife Refuge	City of Chula Vista
Upper San Marcos Creek/Lake San Marcos Nutrient Diagnostic and Cleanup Project - Phases 1,2 and 3	City of San Marcos
Upper San Marcos Creek/Lake San Marcos Voluntary Nutrient TMDL - Phase I Diagnostics	City of San Marcos