



THE CITY OF SAN DIEGO
REPORT TO THE CITY COUNCIL

DATE ISSUED: July 31, 2013 REPORT NO: 13-067

ATTENTION: Natural Resources & Culture Committee
Agenda of

SUBJECT: Informational Update on the Integrated Regional Water Management (IRWM) Plan for the San Diego Region

REFERENCE:

- 1) Resolution Number R-300517, June 13, 2005, approving a Memorandum of Understanding (MOU) between the City of San Diego, County of San Diego and San Diego County Water Authority to form a Regional Water Management Group (RWMG).
- 2) Resolution Number R-302766, June 29, 2007, extending the term and increasing the program funding of the original MOU.
- 3) Resolution Number R-303237, December 18, 2007, adopting the 2007 San Diego IRWM Plan.
- 4) Resolution Number R- 304719, March 20, 2009, extending the term and increasing the program funding of the amended MOU.

REQUESTED ACTION: Information item only. No action is required.

SUMMARY

In 2002, the Integrated Regional Water Management (IRWM) Planning Act (SB 1672) was chaptered into law, establishing the basis by which the California Department of Water Resources (DWR) would administer the State's IRWM Program. Propositions 50 and 84 were approved by the voters in 2002 and 2006 respectively, authorizing a total of \$1.5 billion of State grant funds statewide for IRWM Planning and Programs. Additionally, Proposition 1E was approved by the voters in 2006, authorizing an additional \$300 million in grant funding for stormwater flood management projects that are identified in IRWM Plans.

Since 2005, the Public Utilities Department (Department) has participated materially and financially in the development and implementation of the San Diego IRWM Plan and Program. Public Utilities partnered with the County of San Diego (County) and the San Diego County Water Authority (Water Authority) to form a Regional Water Management Group (RWMG). The RWMG agencies are equal partners, sharing equally in the costs to administer the program. The Water Authority accepted the lead role on behalf of the RWMG and maintains the contractual relationship with the State. The RWMG identified the San Diego IRWM planning region as comprising the 11 hydrologic units (or major watersheds) in San Diego County that flow west to the coastal waters (Attachment 1).

The formation of an RWMG is required by State law in order for regions to be eligible to participate in State IRWM Program grant funding. To date, the IRWM Program has resulted in the award of State grant funding of \$34 million for water management related projects in the San Diego region. Another \$10 million award is currently being reviewed by the State and a balance of \$46 million from Proposition 84 funding will be awarded in subsequent grant rounds.

Integrated Regional Water Management focuses on collaborative efforts to manage all aspects of water resources. IRWM crosses jurisdictional, watershed, and political boundaries; involves multiple agencies, stakeholders, individuals, and groups; and attempts to address the issues and differing perspectives of all the entities involved through mutually beneficial solutions.

One of the unique features of the IRWM Program is that the State does not select projects for grant funding, the regions do. The grant funds made available by Propositions 50 and 84 have been allocated equitably among regions¹. As part of DWR's grant application process, regions must demonstrate that the suite of preferred projects selected by the Region for grant funding meet State and regional goals, as established in each region's Integrated Regional Water Management Plan.

San Diego's draft 2013 IRWM Plan does not deviate greatly from the goals and objectives established in its 2007 IRWM Plan, validating the direction originally established. The 2013 IRWM Plan continues to identify the following overarching goals:

1. Improve the reliability and sustainability of regional water supplies.
2. Protect and enhance water quality.
3. Protect and enhance our watersheds and natural resources.
4. Promote and support integrated water resource management.

The 2013 IRWM Plan expands on certain subjects including: sustainability and climate change; regulatory processes enhancing integrated water management; flood and storm water management; tribal nations; disadvantaged communities; and, technical analysis.

The complete draft 2013 IRWM Plan can be found at www.sdirwmp.org. The final version of the 2013 IRWM Plan will be brought to the City Council for adoption in the fall. The Water Authority's Board of Directors and the County's Board of Supervisors will similarly be asked to formally adopt the 2013 IRWM Plan. Approval of the Plan by the governing bodies of all three RWMG agencies is required by DWR for ultimate Plan approval.

FISCAL CONSIDERATIONS:

Since 2005, the Department has pledged \$600,000 plus staff resources towards the management of the IRWM Program through 2016. This funding amount has been matched by the County and the Water Authority. To date, the Department has directly received grant awards totaling \$11.5 million for City sponsored or co-sponsored projects. A list of all San Diego IRWM Projects

¹ Of the \$1.5 billion total grant funding for IRWM projects statewide, \$91 million is allocated to the San Diego planning region. The San Diego IRWM program selects projects for award; however DWR maintains final approval authority.

funded to date is attached (Attachment 2). This informational update does not include a request for consideration of a fiscal expenditure.

PREVIOUS COUNCIL and/or COMMITTEE ACTION:

A Memorandum of Understanding (MOU) between the three RWMG agencies was first approved by Council in 2005 (R-300517) and since has been amended twice (R-302766 and R-304719), extending the term and program funding to allow the City and other RWMG partners to continue providing program support through 2016. In 2007, Council adopted the first San Diego IRWM Plan (R-303237).

COMMUNITY PARTICIPATION AND PUBLIC OUTREACH EFFORTS:

Recognizing the need for broad stakeholder involvement in IRWM Planning, the RWMG formed a Regional Advisory Committee (RAC) in December 2006. The RAC meets bimonthly and as needed to assist with the development of the IRWM Plan and in the prioritization of projects in funding applications. Additionally, the public is welcome to participate in RAC meetings and various workshops on specific topics. A list of the 34 RAC members is attached (Attachment 3).

Regional outreach for the 2013 San Diego IRWM Plan has been extensive, beginning with a kick-off summit on February 29, 2012 that included a key-note presentation by Mayor Sanders. Since then, 20 public workshops have occurred in addition to 20 publicly noticed workgroup meetings working on key planning study issues.

The IRWM Program maintains an electronic distribution list of more than 450 stakeholders and interested parties who receive IRWM Program updates, announcements, RAC meeting agendas and summaries, water-related workshops and seminars, and updates from DWR. Also, the IRWM Program maintains a website, which can be found at www.sdirwmp.org.

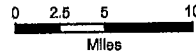
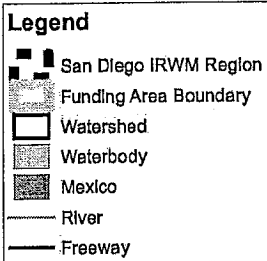
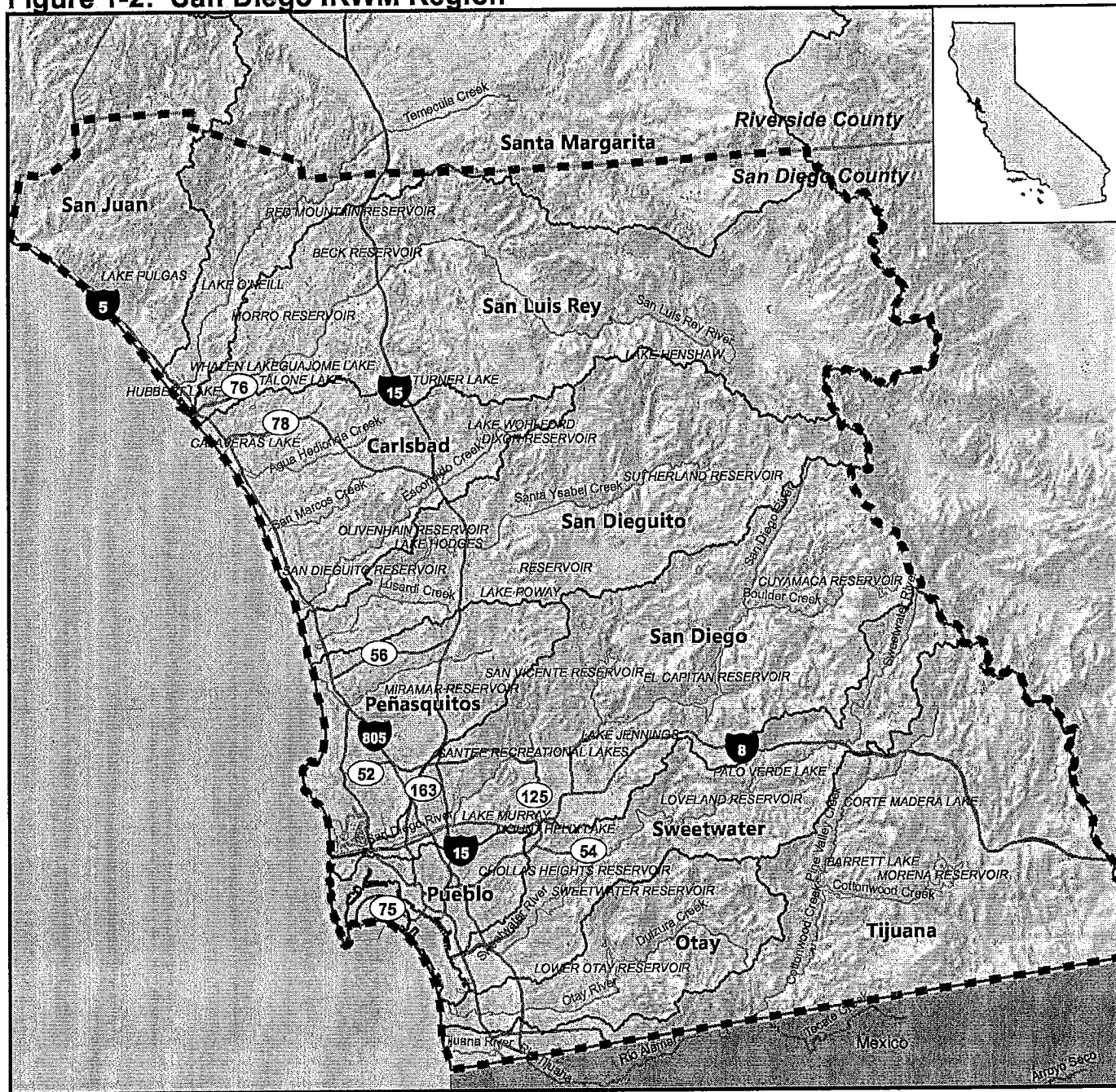
KEY STAKEHOLDERS: Stakeholders in IRWM Planning are governmental or non-governmental entities that have a role in or are affected by the management of water in the San Diego Region. Many agencies are represented on the San Diego IRWM Regional Advisory Committee.

Roger S. Bailey
Public Utilities Department

Attachments:

1. Map of IRWM Funding Area
2. San Diego IRWM Program Projects
3. List of Regional Advisory Committee Members

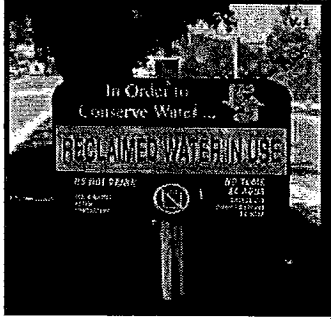
Figure 1-2: San Diego IRWM Region



Source: San Diego Association of Governments (SANDAG) - GIS Data Warehouse
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In 2013, the San Diego IRWM program submitted a grant proposal to the Department of Water Resources for \$9.991 million in funds made available through the voter-approved Proposition 84 (2006). This proposal included 7 projects that would implement high priority programs to meet the San Diego Region's water management needs.

Project 1: North San Diego County Regional Recycled Water Project (NSDCRRWP) – Phase II



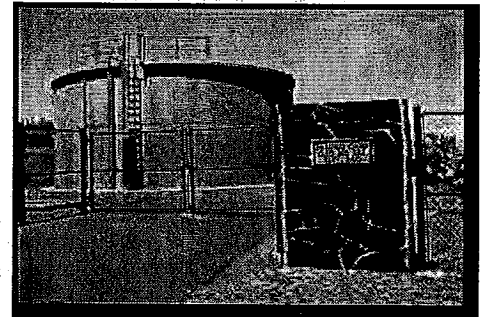
This project will implement the 10 priority sub-projects identified in Phase I of the NSDCRRWP to increase connectivity between recycled water facilities in North San Diego County. This effort will increase use of recycled water by allowing it to be distributed across the North County region, and will produce an estimated 6,790 AFY of recycled water. Project benefits include: reducing imported water dependency, reducing discharge of recycled water to the ocean, reducing energy consumption from pumping imported water, and providing more recycled water for future water needs. The agencies involved with this effort are the Leucadia Wastewater District, Vallejos Water District, Vista Irrigation District, Rincon del Diablo Municipal Water District, Olivenhain Municipal Water District, Santa Fe Irrigation District, Carlsbad Municipal Water District, the City of Escondido, the City of Oceanside, and the San Elijo Joint Powers Authority.

Project 2: Turf Replacement and Agricultural Irrigation Efficiency Program

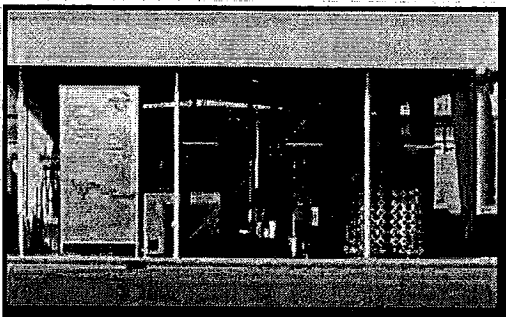
This project creates a fund to improve irrigation efficiency and reduce water use in both agricultural areas and urban landscapes. Through rebate and incentive programs administered by the San Diego County Water Authority and the City of San Diego Public Utilities Department, landowners will be encouraged to implement turf replacement, and retrofit on-site potable water irrigation systems used on agricultural lands to use recycled water. Additionally, this project will fund an outreach effort by the City of San Diego Transportation & Storm Water Department emphasizing dry weather runoff prevention and water quality protection achieved through improvements in irrigation efficiency.

Project 3: Rural Disadvantaged Community (DAC) Partnership Program – Phase II

This program will fund critical water supply and water quality projects in rural DACs in San Diego County. Projects will be chosen based on a project selection criteria developed by the Rural Community Assistance Corporation, the organization heading the Rural DAC Partnership Project. The communities that will be selected are low income, and all projects will have a public health benefit, and address critical water concerns of quality, reliability, and quantity. This program may also fund tribal projects. Examples of the types of projects that may be selected include well replacement, storage tank construction or replacement, or conversion from well water to supplies from a local water agency. Program partners include the San Diego County Water Authority, Indian Health Services, California Department of Public Health, United States Department of Agriculture, United States Environmental Protection Agency, Rural Community Assistance Partnership, City of San Diego, County of San Diego, and the United States Department of Health and Human Services.



Project 4: Failsafe Potable Reuse at the Advanced Water Purification Demonstration Facility

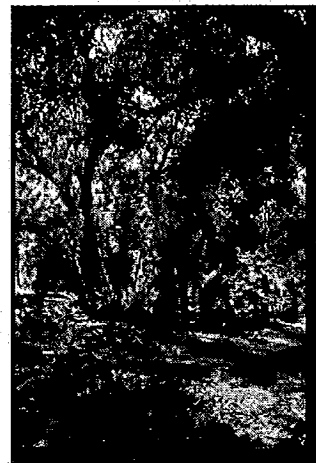


This project is designed to develop and demonstrate a safe and reliable method of designing and implementing potable reuse treatment methods. Through the four tasks in this project, the WaterReuse Research Foundation, the City of San Diego, the Padre Dam Municipal Water District, and the Helix Water District will develop expert panel guidelines for requirements for potable reuse without an environmental buffer, develop a test plan for a failsafe potable reuse system, perform testing to evaluate, monitor, and demonstrate the failsafe concepts developed in the test plan, and provide a complete strategy for failsafe potable reuse. In the process, this project will also test alternative disinfection and oxidation processes, and assess treatment alternatives, monitoring, system

responses, and system reliability. Throughout the project, expert input and information gained through the testing process will be incorporated into the final strategy for failsafe potable reuse.

Project 5: Sustaining Healthy Tributaries to the Upper San Diego River and Protecting Local Water Supplies

This project will protect Boulder Creek, within the San Diego River Watershed, from numerous threats such as sedimentation, temperature increase, and nutrient loading. Given the high quality of Boulder Creek, data collected along the creek will be used as a baseline for other streams in the San Diego River Watershed. Additionally, this project has a goal to purchase and restore up to 3,000 feet of stream currently damaged by private development and wildlife. Utilizing the partnerships formed in developing this project, increased monitoring of creeks draining into the El Capitan Reservoir will occur, and educational programs will be implemented to engage private land owners and reduce pollutant loading, erosion, and sedimentation. Further, outreach specifically geared to three tribes will enable them to survey and monitor water quality on tribal lands. This project is important for protecting the largest local water supply in the region, the El Capitan Reservoir. By protecting and improving water quality upstream of the reservoir, water treatment costs are reduced and the reservoir will better maintain its capacity, reducing the need for imported water. Organizations involved in this integrated effort include the San Diego River Park Foundation, Kumeyaay Diegueno Land Conservancy, San Diego River Conservancy, San Diego State University, Helix Water District, San Diego Stream Team, and San Diego Fly Fishers.



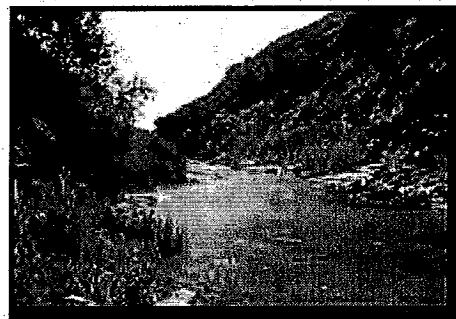
Project 6: Chollas Creek Integration Project – Phase II



This project is part of a larger phased project, which will utilize knowledge gained from the initial project phase to implement restoration activities along key portions of Chollas Creek, which runs through Southeastern San Diego, a large disadvantaged community. This phase of the project is comprised of three parts: Northwest Village Creek Restoration; Invasive Species Removal and Restoration; and Water Pollution Source Tracking, Citizen Monitoring, Pollution/Conservation Education, and Community Engagement. The Northwest Village Creek Restoration improves water quality and reduces flood damage by realigning the creek, installing retaining walls and drop structures, widening culverts and installing headwalls, and removing non-native plants while restoring native vegetation. This will reduce erosion, slow creek flow, and improve water quality, leading to a healthier creek system. The Invasive Species Removal and Restoration segment of the project uses data from Phase I to select restoration sites prioritizing water quality, recreation, wildlife conservation, and stakeholder benefits. Across the five sites selected, a total of six acres of invasive vegetation will be removed and restored to control erosion and create habitat. The final component of this project engages stakeholders through resident-led water quality monitoring and targeted educational outreach. Engaging stakeholders through local citizen science will help further protect the restoration efforts of this project. This project is headed by the Jacobs Center for Neighborhood Innovation, in partnership with Groundwork San Diego, San Diego Coastkeeper, University of California Cooperative Extension, City of San Diego, and Jackie Robinson YMCA.

Project 7: Implementing Nutrient Management in the Santa Margarita River Watershed – Phase II

Continuing work done in Phase I, this project will help establish appropriate water quality objectives for the Santa Margarita River and Estuary. This project has five goals: maximize community involvement; collect feedback from stakeholders to reach consensus on water quality objectives; fill data gaps necessary to establish water quality objectives; develop nutrient water quality objectives for the Santa Margarita River Estuary; and develop nutrient water quality objectives for listed streams in the Santa Margarita River Watershed. This project will improve protection and restoration of the watershed, conservation of water, and control of eutrophication. It will improve science-based management of water resources, and provide a template for similar efforts in the Region. Additionally, it increases stakeholder involvement in the watershed protection process, fostering a sense of stewardship and consensus that will allow greater progress on future watershed management goals. This project is a partnership between the County of San Diego and the Santa Margarita Watershed Nutrient Initiative – Stakeholder Group. The group includes members from Riverside County Flood Control & Conservation District, County of Riverside, US Marine Corps Camp Pendleton's Office of Environmental Security and Office of Water, Rancho California Water District, US Bureau of Reclamation, Fallbrook Public Utilities District, Caltrans, US Navy Space and Naval Warfare Systems Center Pacific, San Diego County Farm Bureau, Upper Santa Margarita Irrigated Lands, Trout Unlimited, Sierra Club, County of San Diego, and Southern California Coastal Water Research Project.



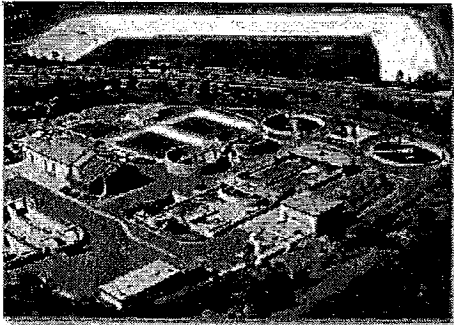
San Diego Integrated Regional Water Management Program

Proposition 84-Round 1 Implementation Grant Overview

In 2011, the San Diego IRWM program submitted a grant proposal to the Department of Water Resources for \$8 million (of \$71 million available to the San Diego IRWM region) in Proposition 84 funds. This proposal included 11 projects that would implement four high priority programs to meet the Region's water management needs.

Water Supply/Recycled Water Program

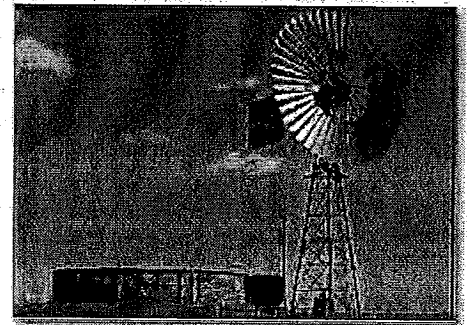
Project 1: Sustainable Landscapes Program. This project is designed to reduce water waste and pollutant infiltration into local waterways through development and implementation of landscape standards and specifications generally consistent with the California State Model Water Efficient Landscape Ordinance and the San Diego Regional Board MS4 Permit. This project is being developed in partnership with San Diego County Water Authority, City of San Diego, County of San Diego, California American Water, and non-profit partners such as California Center for Sustainable Energy, Surfrider Foundation, and Association of Compost Producers. The *Sustainable Landscapes Program* relies on the integration of landscape standards and specifications, education and training, incentives, outreach, and technical assistance to achieve project goals.



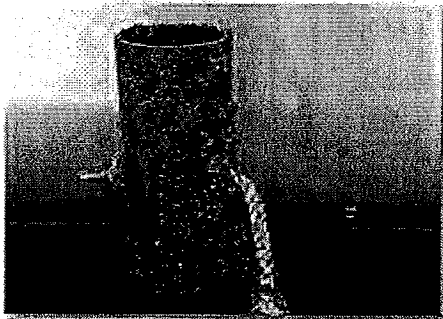
Project 2: North San Diego County Regional Recycled Water Project. This project is an effort by North San Diego County water and wastewater agencies to regionalize recycled water systems by identifying new agency interconnections, seasonal storage opportunities, and indirect potable water use that will maximize supplies, reduce wastewater discharges to ocean, reduce energy consumption due to diminished delivery of imported water, and allow recycled water to play an even more significant role in meeting future water needs. This project will involve support from many partners including Olivenhain Municipal Water District, Carlsbad Municipal Water District, Vallecitos Water District, Santa Fe Irrigation District, City of Oceanside, Leucadia Water District, City of Vista/Buena Sanitation District, San Elijo Joint Powers Authority, City of Escondido, and Rincon del Diablo Municipal Water District.

Project 3: North San Diego County Cooperative Demineralization Project. In Southern California wastewater, brackish water, and urban runoff are high in total dissolved solids (TDS) and other impurities that require advanced treatment to allow beneficial reuse. The *North San Diego County Cooperative Demineralization Project* is focused on developing new local water supplies and managing water quality issues by constructing advanced water treatment facilities at the San Elijo Water Reclamation Facility to mitigate high TDS sources, increase beneficial reuse, and study the feasibility of brackish to potable water desalination in North San Diego County.

Project 4: Rural Disadvantaged Community (DAC) Partnership Project. This project will provide funding to address inadequate water supply and water quality affecting rural DACs, including tribal communities. The project will reduce potential for high public health risks in water and/or wastewater systems and will promote environmental justice in rural communities by providing outreach to rural DACs for available infrastructure projects. The Rural Community Assistance Corporation (RCAC) will manage the grant funds and lead a representative group of stakeholders and agencies, including a representative of the San Diego IRWM program, to solicit and select rural DACs for funding of critical infrastructure improvement projects.

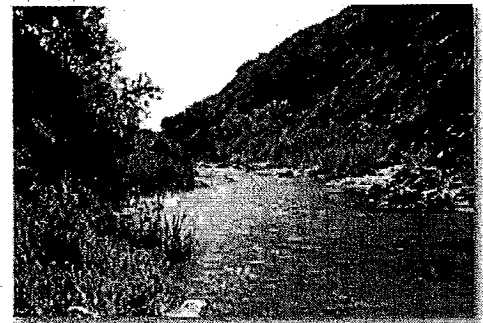


Water Quality/Stormwater Program

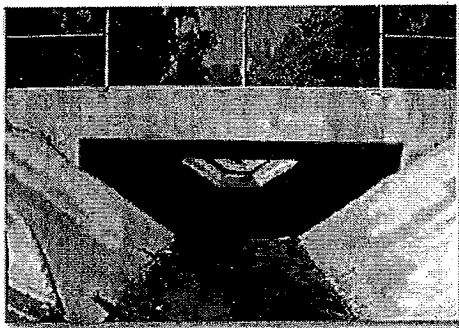


Project 5: Lake Hodges Water Quality and Quagga Mitigation Measures. This project is intended to address two issues centered within the San Dieguito Hydrologic Unit. The first is improving low water quality within Lake Hodges. The second is mitigating against the potential long term effects of quagga mussels on Lake Hodges, San Dieguito Reservoir, Olivenhain Reservoir, and attached facilities. This project is sponsored by the San Diego County Water Authority, but is complementary to the ongoing effort by the San Dieguito Water District, Santa Fe Irrigation District, City of San Diego, San Dieguito River Valley Conservancy, and the San Dieguito Watershed Council to address long term water quality and environmental issues within the Lake Hodges watershed.

Project 6: Implementing Nutrient Management in the Santa Margarita River Watershed. This project aims to establish nutrient water quality objectives (WQOs) for the Santa Margarita River estuary (Phase I) and ultimately the entire Santa Margarita River watershed (Phase II) that will lead to the implementation of nutrient reduction and water conservation practices in the watershed. The project consists of three major activities: 1) form and facilitate discussions among a Santa Margarita River watershed stakeholder group to guide project activities, 2) conduct monitoring and special studies to address data gaps identified by stakeholders to achieve project objectives, and 3) develop nutrient WQOs for the Santa Margarita River estuary. This project will also involve coordination with an adjacent IRWM region, the Upper Santa Margarita IRWM region.



Project 7: Bannock Avenue Neighborhood Streetscape Enhancements for Tecolote Creek Watershed Protection. The goal of the *Bannock Avenue Neighborhood Streetscape Enhancements for Tecolote Creek Watershed Protection* project is to reduce the pollutant load and volume of runoff entering the storm drain system in the Tecolote Creek Watershed. The load reduction goal will be achieved by diverting stormwater from the street to bioretention and treatment planters through curb cutouts. Enhanced streets will infiltrate storm flows through pervious pavement, which will reduce storm flows. These goals will also be achieved by diverting flows through a trash segregation unit and a series of AbTech (Bacterial Treatment System) units within the watershed.



Project 8: Pilot Concrete Channel Infiltration Project. The *Pilot Concrete Channel Infiltration Project* will convert a portion of the concrete channel in Woodglen Vista Creek (and other channels as budget/logistics permit) to a more porous base, facilitating infiltration of dry weather flows without compromising flood control capacity. This effort will assist the City of Santee and other MS4 Copermittees in the attainment of bacteria TMDL waste loading allocations.

Project 9: San Diego Regional Water Quality Assessment and Outreach Project. This project continues critical work conducted by San Diego Coastkeeper through 2011 as part of the Proposition 50 funding cycle. The project will engage community stakeholders to collect and analyze surface water samples in eight to nine watersheds throughout San Diego County and conduct trash removal in these

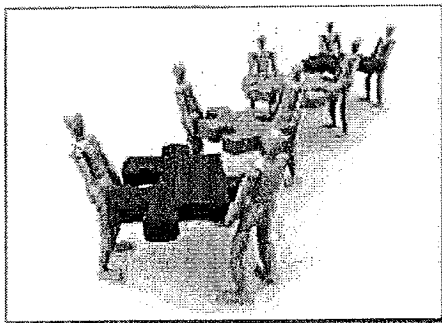
areas. Samples will be analyzed for physical, chemical, bacterial, dissolved metals and nutrient constituents, as well as toxicity and bioassessment indicators. Resultant water quality data will be publicly accessible to support public involvement in water resource conservation and stewardship of watershed function and health.

Natural Resources and Watersheds Program

Project 10: Chollas Creek Integration Project. The purpose of the *Chollas Creek Integration Project* is to gather and generate scientific data and stakeholder input to form an integrated planning process that will update the Chollas Creek Enhancement Program (City of San Diego 2002) and establish implementation strategies. Further, this project will restore native habitat and reduce flooding hazards within Chollas Creek (Section 2A), which will provide baseline data for future water quality and habitat improvements. The project improves and maintains Chollas Creek as a natural urban drainage system that serves as a major conduit for stormwater runoff in the disadvantaged Encanto community.



Data Management Program



Project 11: Regional Water Data Management Program. The goal of the *Regional Water Data Management Program* is to provide a snapshot of current data management efforts and prioritize data needs and lay them out in a basic design parameters recommendations document for the future development of a regional, web-based system for sharing, disseminating and supporting the analysis of water management data and information.

San Diego Integrated Regional Water Management Program

Proposition 50 Implementation Grant Overview

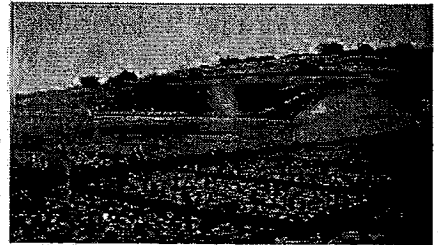
In 2007, the San Diego IRWM program submitted a grant proposal to the Department of Water Resources for Proposition 50 funds. This proposal included 19 projects that would implement four high priority programs to meet the Region's water management needs.

Conservation Program

Project 1: Implementation of Integrated Landscape and Agricultural Efficiency Program. This project aims to increase water efficiency in urban landscapes and agricultural practices, and improve water quality by reducing runoff associated with excessive irrigation. SDCWA will conduct agricultural audits, outreach and education, and retrofits to improve water efficiency without compromising crops or agricultural production. The program has the potential to achieve over 3,600 AFY of water savings.

Project 2: Irrigation Hardware Giveaway and Cash for Plants Project. This project offers customized commercial landscape and residential surveys along with state-of-the-art efficient irrigation hardware, free of charge to customers in the City of San Diego. The project is expected to conserve approximately 91 AFY of water and reduce over-watering, thereby conserving potable water and reducing pollutant-laden dry weather runoff flows.

Project 3: Over-Irrigation Runoff/Bacteria Reduction Project. This project aims to protect water quality by reducing irrigation runoff through improved water use efficiency at eight pilot sites. The project will demonstrate the link between over-irrigation reductions and reductions in pollutant loads. This will be accomplished through water use assessment, flow monitoring and water quality monitoring at key locations in the storm drain system. This project will conserve an estimated 353 AFY of water.

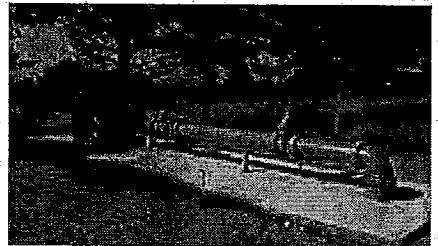


Water Recycling Program

Project 4: Santee Water Reclamation Facility (WRF) Expansion Project. This project includes design and construction of facilities necessary to expand the Title 22 treatment capacity of the Santee WRF from 2 MGD to 4 MGD. This project is part of a coordinated effort to enhance local supplies through an expansion of recycled water production, coupled with increased groundwater recharge using recycled water.

Project 5: Recycled Water Retrofit Assistance Program. This project will provide direct financial assistance to facilitate conversion from potable to recycled water for landscape irrigation and other uses. The project will target approximately 20-40 sites throughout the SDCWA's service area which will allow approximately 2,000 AFY of additional recycled water to be used. The ultimate goal is to promote the development and use of recycled water capable of supplying 5% of the Region's water demand by 2011.

Project 6: City of San Diego Recycled Water Distribution System Expansion, Parklands Retrofit, and Indirect Potable Reuse/Reservoir Augmentation Project. This project has three parts, which together assist the City of San Diego in achieving its target of beneficially reusing 50% of wastewater flows from its North City Water Reclamation Plant. This project includes a million gallon per day water purification demonstration project that will provide data for the community to decide whether or not to proceed with a full-scale potable reuse project in 2013. The project also includes expansion of the existing recycled water distribution area, and adding recycled water connections to irrigate parks and public spaces.

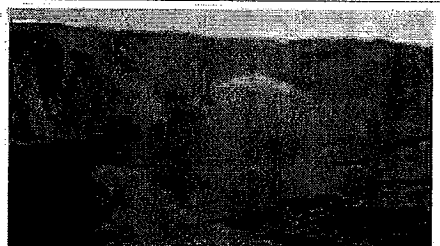


Local Supply Protection and Development Program

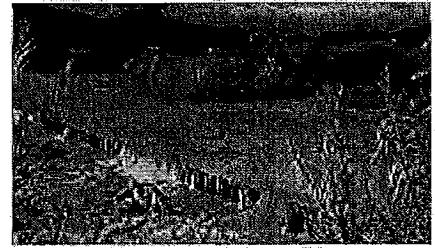
Project 7: San Vicente Reservoir Source Water Protection through Watershed Property Acquisition and Restoration Project. This project will acquire lands from willing sellers around San Vicente Reservoir for the purpose of creating an expanded drinking source water protection buffer. San Vicente Reservoir is being enlarged to nearly 200,000 AF as part of the SDCWA's Emergency Storage Project. The buffer will provide high quality habitat and protect associated sensitive species.

Project 8: El Capitan Reservoir Watershed Acquisition and Restoration Program. This project will acquire and restore approximately 120 acres of targeted vacant undeveloped lands upstream and in the immediate vicinity of the El Capitan Reservoir. The project will protect source water quality at the reservoir by reducing the potential for non-point source pollution, removing trash and debris from the properties, planting 800 trees, maintaining a biologically significant wildlife corridor, and preserving habitat.

Project 9: Northern San Diego County Invasive Non-Native Species Control Program. This project will aim to eradicate 374 acres of targeted invasive non-native plant species throughout Northern San Diego County. It would protect and enhance habitat; conserve water resources by increasing available groundwater; protect water delivery and storage systems by reducing flood damage; improve water quality by reducing erosion and normalizing sediment discharge processes; and reduce fire risk.



Project 10: Santa Margarita Conjunctive Use Project. This project provides for enhanced recharge and recovery from the groundwater basin to provide a water supply for both Camp Pendleton and Fallbrook as resolution of a long-standing water rights dispute. The project will provide approximately 6,000 AFY of new local supply from the Santa Margarita River by conjunctively managing the groundwater basin. Additionally, 1,380 acres of sensitive habitat will be preserved along the river as a result of this project.



Project 11: Carlsbad Desalination Project Local Conveyance. This project will provide 56,000 AFY of new water supply through the design and construction of pipelines and facilities to serve local desalinated water from the Carlsbad Desalination Project to SDCWA member agencies. The project provides a secure and reliable water supply for 30 years with two possible 30-year extensions.

Project 12: San Diego Region Four Reservoir Intertie Project Feasibility Study. This project will provide an initial design and work plan for a conveyance system that will increase the capability to manage and store imported water in four existing reservoirs. The project would create an enhanced and integrated reservoir system to more efficiently use existing storage, increase water supply reliability, more effectively use imported water aqueducts, and increase accessibility to ~100,000 AF of surface storage.

Project 13: South San Diego County Water Supply Strategy. This project will investigate the sustainable use of the apparently vast groundwater resources of the San Diego Formation (SDF), a natural underground aquifer that underlies the central and south San Diego Bay area. Reliable assessments currently estimate that the SDF holds upward of 1,000,000 AF of water. This extensive local water resource has the potential to significantly supplement water supplies and reduce dependence on imported water through its efficient development and use.

Project 14 was not completed and its grant award was redistributed among several other projects in the package.

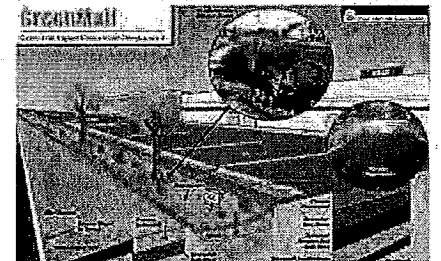
Education and Outreach Program

Project 15: San Diego Regional Pollution Prevention Project. This project will remove trash and debris and assess the water quality within San Diego County through citizen monitoring. It seeks to establish a baseline of trash and water quality data that will be transferable to the local communities that live in the Region through two web-based, publicly accessible data portals. The project will teach a minimum of 300 members of the community how to access publicly available water quality data and to analyze and interpret these data to identify water quality impacts on a watershed level.



Project 16: Biofiltration Wetland Creation and Education Program. This project will develop a biofiltration wetland within the Safari Park (San Diego Wild Animal Park), which will be used to improve water quality through natural biological filtration and enhance wetlands habitat. The constructed wetlands will act as biological filters to remove high biological oxygen demand, total suspended solids, organic nitrogen, and nitrates. The wetlands will also be used to educate visitors about water conservation and the importance of conserving wetlands.

Project 17: San Dieguito Watershed Management Plan Implementation – Lake Hodges Natural Treatment System Conceptual Design. The Lake Hodges Natural Treatment System Conceptual Design project will provide initial design and a work plan for reduction of pollution loads to the City of San Diego's Lake Hodges Reservoir, which is a water supply source for north county communities and planned to be intertied to the regional water supply system. Natural treatment systems are an established cost-effective and environmentally sound way for reducing pollutant loading.



Project 18: City of San Diego Green Mall Porous Paving and Infiltration. This project will retrofit storm water systems, allowing urban runoff and pollutants carried with it to infiltrate into the ground instead of discharging directly to the storm drain system and adjacent waterbodies. Existing asphalt street paving will be replaced with pervious concrete. Existing curbs and gutters will be moved into the street, and bio-retention systems of crushed rock and trees will be installed in the created space. The project will also include water quality monitoring and educational outreach.

Project 19: County of San Diego Chollas Creek Runoff Reduction and Groundwater Recharge Project. This project will demonstrate practical implementation of a range of low impact development (LID) practices to reduce runoff from three County facilities. The project will include demonstrations of porous pavements over stone reservoirs, capture/infiltration technologies and landscape elements such as rain gardens and swales.



RAC 2.0 Member Composition

* = recommended for 4-year terms

** = already have 2-year terms

***= RWMG members (no terms)

****=Non-Voting members (no terms)

Regional Water Management Group (3)

1. City of San Diego – Marsi Steirer***
2. County of San Diego – Kathy Flannery***
3. San Diego County Water Authority – Ken Weinberg***

Water Supply (5)

Agencies and entities tasked with supplying water to homes, businesses, and agriculture

1. Retail (North County- Inland) – Bill Hunter/SFID**
2. Retail (North County- Coastal) –Cari Dale/Oceanside**
3. Retail (East County) – Mark Umphres/Helix**
4. Retail (South County) – Jennifer Sabine/Sweetwater*
5. Retail (At Large) – Kim Thorner/Olivenhain*

Water Quality (6)

Agencies and entities tasked with managing storm runoff, both quantity and quality, in man-made conveyances and/or collecting and disposing of wastewater, including water recycling

1. Stormwater Management (North County) – Crystal Najera/City of Encinitas*
2. Stormwater Management (South/East County) –Kirk Ammerman/City of Chula Vista**
3. Water Quality (NGO) – Travis Pritchard/San Diego CoastKeeper **
4. Water Quality (NGO) – Leigh Johnson/University of California Cooperative Extension*
5. Wastewater/Recycled Water (Metro JPA) – Bob Kennedy/Otay Water District*
6. Wastewater/Recycled Water (Non-Metro JPA) – Mike Thornton/San Elijo JPA**

Natural Resources and Watersheds (5)

Agencies and entities tasked with preserving, enhancing, and managing natural resources and watersheds

1. Water Conservation (NGO) – Patrick Crais/California Landscape Contractors Association*
2. Protection and Restoration (NGO) – Rob Hutsel/San Diego River Park Foundation **
3. Protection and Restoration (NGO) – Ronald Wooten/Buena Vista Lagoon Foundation*
4. Recreation – Al Lau/Padre Dam Municipal Water District*
5. Coastal Ecosystems (Bays, Estuaries, Lagoons) – Kimberly O’Connell/UCSD Clean Water Utility*

DAC/Environmental Justice (2)

Agencies and entities who represent disadvantaged communities and/or environmental justice concerns

1. Urban DAC – Leslie Reynolds/Groundworks San Diego- Chollas Creek*

2. Rural DAC – Dave Harvey/Rural Community Assistance Corporation**

Other Members (7)

Other agencies and entities with interest in and/or impact on water resource management

1. Flood Management –Dennis Bowling/Floodplain Management Association**
2. Business Community – Anne Bamford/ Industrial Environmental Association **
3. Agriculture – Eric Larson/San Diego County Farm Bureau *
4. Tribal – open
5. Land Use Planning – Katie Levy/San Diego Association of Governments*
6. At Large* - Linda Flourney/SDSU Center for Regional Sustainability**
7. At Large* -- Robyn Badger/Zoological Society of San Diego*

** For At Large seats, consideration should be given but not limited to the following criteria: academia, climate change, energy/water nexus, solid waste/water nexus, sustainability.*

Total voting members: 28

Non-Voting Members (6)

State, federal, and regional agencies who are interested parties

1. Regional Water Quality Control Board – Laurie Walsh****
2. U.S. Bureau of Reclamation- Jack Simes ****
3. Military Community- John Simpson/USMC Camp Pendleton ****
4. Tri-County FACC (Upper Santa Margarita RWMG)- Denise Landstedt/Rancho California Water District ****
5. Tri-County FACC (South Orange County RWMG)- Marilyn Thoms/ County of Orange****
6. State Coastal Conservancy - open



THE CITY OF SAN DIEGO
REPORT TO THE CITY COUNCIL

DATE ISSUED: July 22, 2013 REPORT NO: 13-068

ATTENTION: Natural Resources and Culture Committee,
Agenda of

SUBJECT: Potable Reuse Project – 90-Day Update Pursant to City Council’s
acceptance of the Water Purification Demonstration Project Report

REFERENCE: 1) Resolution Number R-308121 of the City Council accepting the
Water Purification Demonstration Project Report, accepted
April 23, 2013.

2) Resolution Number R-307584 of the City Council accepting the
Recycled Water Study, accepted July 17, 2012.

REQUESTED ACTION:
None.

STAFF RECOMMENDATION:
Informational Item Only.

SUMMARY:

On April 23, 2013, the City Council unanimously adopted the Water Purification Demonstration Project Report (Resolution R-308121). At this meeting, Council also directed staff to define in greater detail the City’s potable reuse options, including direct potable reuse. There is overlap between this Council directive and follow-on work associated with the Recycled Water Study, which was adopted by the City Council in July 2012 (Resolution R-307584).

The following lays out the recommended next steps from the Demonstration Project Report, the Recycled Water Study, and Council’s directive to explore direct potable reuse:

- 1. Determine a preferred implementation plan and schedule that considers potable reuse options for maximizing local water supply and reducing flows to the Point Loma Wastewater Treatment Plant.**

The Public Utilities Department (Department) will build upon major findings from both the Recycled Water Study and the Demonstration Project Report:

- The Recycled Water Study laid out high-level concepts for 83 million gallons per day (mgd) of potable reuse by 2035. When combined with non-potable reuse (18 mgd) and a

planned Helix Water District reuse project (5 mgd), future total reuse is estimated to be 106 mgd. This would result in a 135 mgd reduction in flows to Point Loma.

- The Water Purification Demonstration Project (Demonstration Project) established the feasibility of a 15 mgd full-scale indirect potable reuse (IPR) utilizing the San Vicente Reservoir.

The tasks below are intended to establish maximum feasible reuse capacities for each of the Recycled Water Study's prospective treatment sites, under both IPR and direct potable reuse (DPR) schemes. Figure 1, Potable Reuse Facility Alternatives, shows the locations of these sites and the amount of water that could be conveyed to San Vicente and Otay Reservoirs for IPR (Attachment). Cost estimates and implementation schedules will also be prepared so that the merits of IPR and DPR can be compared.

- A. Detailed siting studies are needed to determine if facility locations identified in the Recycled Water Study can accommodate the conceptualized facility capacities. In Fiscal Year 2013, the Department initiated studies for the following: 1) a treatment facility located at Harbor Drive and McCain Road near the Airport; and 2) a wastewater pump station near Morena Boulevard and Balboa Avenue to divert additional wastewater to a future North City Advanced Water Purification Facility (AWPF). In Fiscal Year 2014 the Department will complete siting studies for the remaining treatment facilities identified in the Recycled Water Study, as well as for pipelines that will convey purified water from the various treatment sites.
- B. The Demonstration Project was narrowly focused on a 15 mgd IPR project that would augment supplies in the San Vicente Reservoir. Water quality data from 12 months of AWPF operations, cost and energy evaluations, reservoir modeling, public opinion polling results, and letters of concept approval received from State regulators showed that a full-scale reservoir augmentation project is feasible. The separate Recycled Water Study included IPR project concepts that could augment the San Vicente Reservoir supplies by as much as 68 mgd. Additional reservoir modeling is needed to determine what maximum amount of IPR flow can be feasibly put into San Vicente Reservoir. This study will utilize the same computer model of the San Vicente Reservoir that was used for the Demonstration Project. Staff plans to contract with the National Water Research Institute (NWRI) to form an expert panel that will provide guidance and oversight for this work.
- C. The Recycled Water Study also included a 15 mgd IPR concept utilizing the Otay Reservoir, with an advanced water purification facility at the South Bay Water Reclamation Plant. An Otay Reservoir Study will be needed to determine the maximum amount of IPR flow that can be put into the Otay Reservoir. No computer model of the Otay Reservoir exists, and one must be crafted for this analysis. A reservoir tracer study must be performed to support the model's calibration and validation. Staff plans to use the same panel formed for the San Vicente Reservoir studies for guidance and oversight for this work at the Otay Reservoir.

- D. The Demonstration Project identified two possible pipeline alternatives for conveying purified water from North City to the San Vicente Reservoir. Follow-up work is needed to select the alternative, as well as to refine the alignment of the last 7,000 feet to the reservoir inlet. The last section to reach the inlet is estimated to be the most costly portion of the pipeline; less-costly alternatives will be evaluated.
- E. Tasks 1A through 1D will refine the Recycled Water Study's IPR alternatives. Task 1E will identify the preferred Recycled Water Study alternative.
- F. The Recycled Water Study concepts did not include any DPR options. Conceptual DPR facility scopes and costs will be developed for each of the treatment locations identified in the Recycled Water Study.
- G. The Recycled Water Study conceptualized building a large treatment facility at Harbor Drive and McCain Road, just west of the San Diego Airport. The site is currently occupied by the Regional Public Safety Training Institute (RPSTI). The Department has initiated the acquisition of the site and relocation of the RPSTI. This task will be led by the Real Estate Assets Department.
- H. Preliminary implementation schedules have been based on the traditional design-bid-build contracting approach. Other contracting approaches will be evaluated considering management of risk, schedule and cost benefits.
- I. Findings and conclusions from Tasks 1E through 1H will be synthesized into a recommended alternative for implementation.

2. Continue Outreach Efforts

It is widely acknowledged that public acceptance is the most difficult hurdle facing agencies planning to implement potable reuse. In addition to all of the technical work described above, public outreach and education will continue to keep the public apprised of the City's potable reuse initiatives. The communication plan that provided the basis for outreach and education activities during the Demonstration Project has been updated to include messaging about:

- Demonstration Project results
- Potential full-scale facilities
- Direct potable reuse
- Ongoing research to define regulatory requirements

The updated communication plan will be incorporated into the speakers bureau, community events, and AWPf tours.

3. Develop a strategy for allocating potable reuse costs among local water and wastewater funding sources

The Recycled Water Study briefly described potential frameworks for allocating implementation costs to local water and wastewater funding sources. The Department will work with stakeholders to reevaluate the merits of those alternatives and consider new ones, with the ultimate goal of establishing a methodology for allocating costs. As the implementation of potable reuse options will have a direct impact on flow to the Point Loma Wastewater Treatment Plant and on future National Pollutant Discharge Elimination System Permits, both the water and wastewater systems will share in the costs.

4. Develop a financing plan

Staff will develop a financing plan that incorporates the implementation schedule, facility costs, and cost allocation framework determined in Tasks 1, 2, and 3. This will be undertaken once Tasks 1, 2, and 3 are complete.

5. Monitor the development of direct potable reuse regulations

Legislative Activities. Senate Bill 918 (SB 918) was chaptered into law in 2010, establishing a schedule for the California Department of Public Health (CDPH) to work with stakeholders like the City in the development of uniform criteria for approving IPR projects with groundwater recharge and reservoir augmentation. To date, CDPH has issued draft criteria for IPR with groundwater recharge for review and comment. Uniform regulatory criteria for IPR with groundwater recharge are expected to be completed by the end of 2014 and will serve as the basis for the development of uniform regulatory criteria for IPR with reservoir augmentation, which is expected to be completed by December 2016.

The Department has actively supported the development of potable reuse regulations. Department staff attended the CDPH's public scoping meetings on SB 918, reviewed and commented on first draft regulations, and supported the work of organizations such as WaterReuse and NWRI in their efforts to provide CDPH with data and technical insights advancing the regulatory scoping process.

Per SB 918, CDPH is required to investigate and report to the Legislature on the feasibility of developing uniform criteria for DPR by December 2016, but only after the completion of the uniform criteria for IPR with groundwater recharge and reservoir augmentation. The linear nature of the review process was intended to allow CDPH time to focus on a framework approach that could be expanded to incorporate related potable reuse applications. Therefore, any schedule delays with CDPH's development of uniform regulatory criteria for IPR projects would lead to a delay of the scheduled review of DPR. To that end, the San Diego County Water Authority (Water Authority) sponsored legislation in 2013 (SB 322), sponsored by Senator Hueso, intended to help keep CDPH on schedule with its review of regulatory criteria for IPR with reservoir augmentation. The Department worked closely with the Water Authority in the drafting of the bill's language and participated in bicameral sessions that assisted in framing the legislative efforts.

The Department continues to stay engaged with California's regulators, providing critical insights regarding the urgency of our region's need to cost-effectively develop local water supply options. San Diego's leadership with regard to potable reuse is recognized statewide.

Research Activities. In addition to the above legislative activities, the Department also successfully secured Proposition 50 and 84 grant funding for research to help define regulatory criteria for DPR, as well as to continue operating the AWPf. Proposition 50 funding in the amount of \$2.6 million will be used to install additional treatment equipment at the AWPf and evaluate its effectiveness. The objective of the research is to verify that the additional treatment barriers can provide public health protection equivalent to an environmental buffer. This research will occur from April 2013 through August 2014. The City's share of the costs is \$50,000.

The City partnered with the WateReuse Research Foundation (WRRF) to obtain Proposition 84 funding in the amount of \$2.2 million to develop guidelines for ensuring treatment failure response readiness. The City's and WRRF shares of the cost are, respectively, \$70,000 and \$995,000. Such response readiness is expected to be integral to DPR regulations due to the absence of an environmental buffer. As part of the research, an expert panel will define guidelines that consider the human factor, monitoring, and reliability strategies; these guidelines will be tested and demonstrated at the City's AWPf. The research will occur from the fall of 2013 through the summer of 2015; findings and recommendations will be provided to the CDPH in early 2016 for their use in determining the feasibility of DPR regulations.

6. Join the Direct Potable Reuse Initiative led by the WateReuse Research Foundation

The objective of the Direct Potable Reuse Initiative is to support CDPH in its effort to meet the December 31, 2016 deadline established by SB 918 for issuing a report on the feasibility of DPR. The City, along with 44 other water agencies and firms around the state, has joined the initiative. The initiative is funding various research projects to provide guidance to CDPH as to the treatment and monitoring requirements for direct potable reuse. The Proposition 84-funded research described above is among these projects. As a member of the initiative, the City will be a stakeholder in the overall effort, participate in meetings with the State's independent advisory panel, and receive regular updates from WateReuse.

7. Coordinate potable reuse implementation strategy with Point Loma 2015 Permit Renewal Application

Potable reuse will have a direct impact on the wastewater flow to the Point Loma Wastewater Treatment Plant and is thus expected to have a key part in the upcoming discussions of Point Loma's permit renewal.

8. Continue AWPf Operations

The AWPf will continue to operate and the water tested through Fiscal Years 14 and 15. Twenty (20) months of operational costs will be included in grant reimbursable research contracts. Grant funding has been secured through Propositions 50 and 84. The City's cost for operations and electricity during this time is estimated to be \$720,000. This will allow the AWPf to be available for public tours and to continue this aspect of public outreach.

Execution of the Work

The Department will be forming a stakeholder group to participate and provide input throughout the completion of the above next steps.

Much of the work associated with Tasks 1, 3 and 8 will be conducted using existing consultant contracts, while Tasks 4 through 7 will be performed by City staff. Scope and fee negotiations are underway for Tasks 1 and 3, and the estimated costs and timelines for these tasks are still being refined. Work, however, is expected to begin in the first quarter of Fiscal Year 2014 and take approximately three years to complete.

Public outreach staff will continue to utilize the services of Katz and Associates for Task 2 through 2013. Staff has initiated the process to hire an outreach consultant to provide support beginning in 2014.

The City's as-needed contract with Trussell Technologies will be utilized for Task 8; this contract will terminate on December 10, 2013. Staff has initiated the process to obtain Council approval to extend this contract through July 2015.

Outcome and Implementation Strategy

The above-described work will culminate in an implementation strategy identifying the reuse projects that could be implemented, their timing, and financing needs. The major challenge will be to continue making progress towards full-scale implementation while maintaining all options, i.e., *both* IPR and DPR options. CDPH's feasibility finding as to setting DPR regulatory criteria is due at the end of 2016. If circumstances delay CDPH's feasibility finding, the City's implementation strategy needs to:

- Emphasize flexibility and adaptability
- Differentiate between facilities that can be utilized for both modes of potable reuse (IPR or DPR), versus those that pertain specifically to one mode and not the other. For example, a portion of the purified water pipeline is needed for both modes, whereas the extension to the San Vicente Reservoir is only needed for IPR. The treatment facilities can be similarly segmented.
- Integrate IPR and DPR options
- Identify IPR-DPR decision points
- Balance schedule, cost effectiveness, efficiency
- Sustain the current momentum

Future reports will provide the progress made on the development of such a strategy.

FISCAL CONSIDERATIONS:

Not applicable at this time.

PREVIOUS COUNCIL and/or COMMITTEE ACTION:

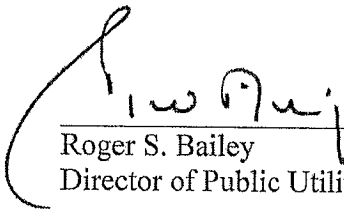
On July 17, 2012, the City Council accepted (R-307584) the Recycled Water Study. On April 23, 2013, Council accepted (R-308121) the Water Purification Demonstration Project Report.

COMMUNITY PARTICIPATION AND PUBLIC OUTREACH EFFORTS:

Throughout the duration of the Demonstration Project, the City sought to ensure that information was presented in a clear, understandable, and accessible way to residents in all areas of the City. Such outreach activities will continue to inform residents about the Demonstration Project's results, as well as the City's ongoing potable reuse planning efforts. Activities include group presentations, community events, and tours of the Demonstration AWP Facility.

KEY STAKEHOLDERS AND PROJECTED IMPACTS:

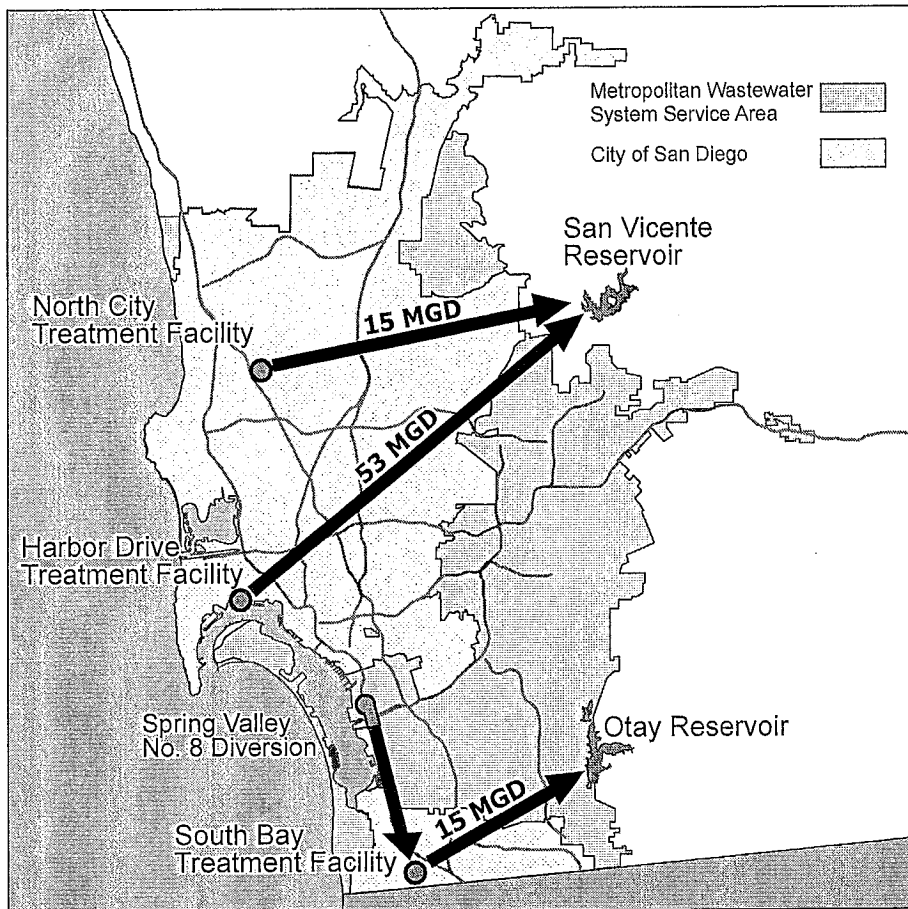
The Public Utilities Department is in the process of forming a stakeholder group to participate in the potable reuse planning efforts described herein.



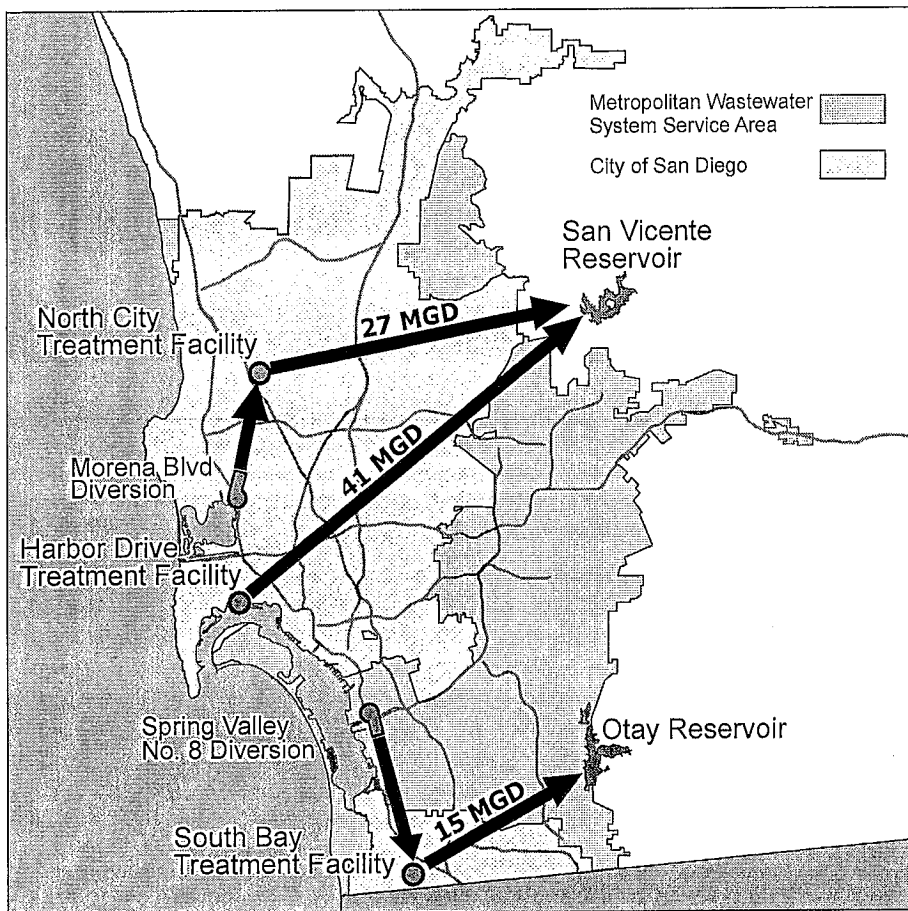
Roger S. Bailey
Director of Public Utilities

Attachment: Figure 1 – Potable Reuse Facility Alternatives

Figure 1 - Potable Reuse Facility Alternatives



2035 Potable Reuse Potential



2035 Potable Reuse Potential